

# Highway Safety Literature

Annual Cumulation 1969

Human Factors Bibliography. . .

HS-820 075

Issues 69-1 through 69-5

January-December 1969



*U.S. Department of Transportation / National Highway Safety Bureau*

**HIGHWAY SAFETY LITERATURE  
ANNUAL CUMULATION 1969  
HUMAN FACTORS BIBLIOGRAPHY**

**Issues 69-1 through 69-50  
[January - December 1969]**

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National Highway Safety Bureau

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EDITOR'S NOTE: Material published in HIGHWAY SAFETY LITERATURE (HSL) is intended for the information and assistance of the motor vehicle, highway safety community. While brand names, equipment model names and identification, and companies may be mentioned from time to time, this data is included as an information service. Inclusion of this information in the HSL should not, under any circumstances, be construed as an endorsement or an approval by the Department of Transportation of any particular product, course, or equipment.

## INTRODUCTION

The Technical Information System of the National Highway Safety Bureau acquires scientific and technical information covering all phases of traffic and motor vehicle safety, especially on those subjects encompassed by the National Traffic and Motor Vehicle Safety Act of 1966, and the National Safety Act of 1966. Each week, citations to these acquisitions are published in HIGHWAY SAFETY LITERATURE.

This publication is a five volume set which cumulates all citations which appeared in HIGHWAY SAFETY LITERATURE during 1969. Each volume covers one broad subject field and is arranged by group according to the NHSB SUBJECT CATEGORY FIELDS AND GROUPS listed below:

### NHSB SUBJECT FIELDS AND GROUPS

<b>1/0 ACCIDENTS</b>	<b>HS-820 073</b>	
/1 Emergency Services (11, 15-16)		/4 Governmental Aspects
/2 Injuries		/5 Information Technology
/3 Investigation and Records (10, 14-15)		/6 Insurance
/4 Locations (9, 14)		/7 Mathematical Sciences
		/8 Transportation Systems
<b>2/0 HIGHWAY SAFETY</b>	<b>HS-820 074</b>	<b>5/0 VEHICLE SAFETY</b> <b>HS-820 075</b>
/1 Breakaway Structures		* All Federal Motor Vehicle Safety Standards apply to passenger vehicles. An asterisk before a subject group indicates additional types of vehicles to which the indicated standard may apply.
/2 Communications		/1 Brake Systems (102, 105-6, 116)
/3 Debris Hazard Control and Cleanup (15-16)		* /2 Buses, School Buses, and Multipurpose Passenger Vehicles (102-4, 106-8, 111-3, 116, 205-6, 207-1)
/4 Design and Construction (12, 14)		* /3 Cycles (3; 108, 112, 116, 205)
/5 Lighting (14)		/4 Design (14; 101-2, 105, 107, 201)
/6 Maintenance (12)		/5 Door Systems (201, 206)
/7 Meteorological Conditions		/6 Fuel Systems (101, 301)
/8 Police Traffic Services (15)		/7 Glazing Materials (205)
/9 Traffic Control (13-14)		/8 Hood Latch Systems (113)
/10 Traffic Courts (7)		/9 Inspection (1)
/11 Traffic Records (10)		/10 Lighting Systems (101, 105, 108, 112)
<b>3/0 HUMAN FACTORS</b>	<b>HS-820 075</b>	/11 Maintenance and Repairs
/1 Alcohol (8, 14)		/12 Manufacturers, Distributors, and Dealers
/2 Anthropomorphic Data		/13 Mirrors and Mountings (107, 111)
/3 Cyclists		/14 Occupant Protection (15; 201-4, 207-10)
/4 Driver Behavior		/15 Propulsion Systems
/5 Driver Education (4, 14)		/16 Registration (2, 10)
/6 Driver Licensing (5, 10, 14)		/17 Safety Defect Control
/7 Drugs Other Than Alcohol		/18 Steering Control System (101, 107, 203-4)
/8 Environmental Effects		/19 Theft Protection (114-5)
/9 Impaired Drivers		* /20 Trucks and Trailers (102-4, 107-8, 112-3, 116, 205-6, 209)
/10 Passengers		/21 Used Vehicles
/11 Pedestrians (14-15)		/22 Wheel Systems (109-10, 211)
/12 Vision		/23 Windshield, Baked-Glass, and Laminated Glass (101, 103-4, 107-10)
<b>4/0 OTHER SAFETY-RELATED AREAS</b>	<b>HS-820 076</b>	
/1 Codes and Laws (6)		
/2 Community Support (12)		

# SAMPLE ENTRIES

Subject Category Array **HS-800 069** Fld. 5/22  
 NHSB Accession no. ....  
 Title of document ..... **DEVELOPMENT OF A TEXTILE  
CORD LOAD TRANSDUCER**  
 Personal author(s) ..... by B. E. Bourland, S. K. Clark, R. N.  
Dodge  
 Corporate author ..... Michigan Univ., Ann Arbor. Tire and  
Suspension Systems Research Group,  
 ID Code number ..... M43800

Collation .....  
 Publication date ..... May 1968 39p  
Contract CST377  
Report no. 01193-1-T

Abstract ..... A technique is described for building  
directly into a tire cord a small force  
transducer to measure tire cord loads  
directly....

Search terms: Tire loads, Trans-  
ducers, Tire design, Pneumatic tires

AVAILABILITY: From CFSTI

HS-004 497 Fld. 5/19

**AUTO THEFT--THE PROBLEM  
AND THE CHALLENGE**

by Thomas A. Williams, Sr.

Journal citation ... Published in *FBI Law Enforcement  
Bulletin* v37 n12 p15-7 (Dec 1968)

Gives figures on the extent of the  
auto theft problem and comments on  
antitheft devices available now or in  
the planning stage.

Search terms: Theft, Theft protec-  
tion, Stolen cars

## AVAILABILITY OF DOCUMENTS

Department of Transportation personnel may borrow copies of  
publications directly from the NHSB, Technical Reference  
Division (Phone: 426-2768 or 426-2769). Non-DOT personnel  
should contact their company or agency libraries for assistance.

Journals cited can be found in most research libraries.  
Reprints of journal articles can often be obtained without  
charge from the individual author, whose affiliation is usually  
given in the article.

Contractors reports and other documents can usually be ob-  
tained as indicated under AVAILABILITY. However, there is no  
certainty that retention copies will be available for more  
than a limited period after a document is issued.

The more common distribution sources are identified by symbols  
which are explained below:

CFSTI: Clearinghouse for Federal Scientific and Technical  
Information, Springfield, Va. 22151. Order by accession  
number: AD or PB; order NHSB contractors reports by HS  
numbers if a PB number is not given. Prepayment is required

by CFSTI coupon (GPO coupons are not acceptable), check, or money order (made payable to the Clearinghouse). HC (Paper copy; full size original or reduced facsimile) \$3.00; MF (Microfiche; approximately 4x6" negative sheet file; special reader required) \$0.65.

GPO: Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Give corporate author, title, personal author, and report number. Prepayment is required by GPO coupon (CFSTI coupons are not acceptable), check, or money order (made payable to the Superintendent of Documents).

HRB: Highway Research Board, National Academy of Sciences, 2101 Constitution Ave., N.W., Washington, D. C. 20418.

FHWA-OPA: Federal Highway Administration, Washington, D.C. 20591. Office of Public Affairs.

NHSB: National Highway Safety Bureau, Washington, D.C. 20591

SAE: Society of Automotive Engineers, 2 Pennsylvania Plaza, New York, N.Y. 10001. Prices given are list; discounts are available to members and sometimes to libraries and U.S. Government agencies. Prepayment is required; orders without payment are subject to \$1 handling charge.

UMF: University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106. Order dissertations by order number and author's name. Do not send payment with order. Invoice sent with shipment will include cost of order plus handling and shipping charges. HC (Bound, soft cover, xerographic copies, approx. 5 1/2 x 8 1/2"); MF (positive 35mm microfilm).

#### OTHER NHSB TECHNICAL INFORMATION SYSTEM PUBLICATIONS

Available in single copies at no cost from DOT, NHSB, Technical Information System, Room 5116G, Washington, D.C. 20591.

NHSB Subject Category List, September 1969 - HS-820 051.  
NHSB Corporate Author Authority List, January 1970 - HS-820 069.  
NHSB Thesaurus Rules and Conventions, January 1970.

#### In Process:

NHSB Guidelines for Subject Analysis of Documents, 1970.  
NHSB Thesaurus of Traffic and Motor Vehicle Safety Terms, June 1970.  
NHSB Cumulative Indexes.



### 3/0 HUMAN FACTORS

HS-800 042 Fld. 3/0

#### SAFETY SPECIALIST MANPOWER. VOLUME 1. MANPOWER REQUIRE- MENTS

Booz-Allen, and Hamilton,  
Inc., Washington, D. C.

14 Oct 1968 604p  
Contract FH-11-6496

Surveys projected and current manpower requirements for the states, identifies manpower resources, describes jobs, identifies educational institutions and organizations which could train safety specialists, and prepares plans and programs to facilitate highway safety programs. About 65,000 state safety specialists are now employed. The estimated number needed by 1977 is from 87,000 to 250,000.

Search terms: Highway  
safety, Safety programs,  
Manpower utilization,  
State government,  
Education

AVAILABILITY: CFSTI

HS-800 043 Fld. 3/0

#### SAFETY SPECIALIST MANPOWER. VOLUME 2. MANPOWER RESOURCES Booz-Allen, and Hamilton, Inc., Washington, D. C.

14 Oct 1968 198p  
Contract FH-11-6496

Analysis of manpower levels needed for highway safety programs. Estimates are given by year from 1968 to 1977, organized into three skill levels: high school, one-three years college, and college skills. If current recruitment policies continue, shortages of manpower are predicted. An inventory of existing and planned highway safety courses in state agencies and in selected colleges and universities is included.

Search terms: Highway

safety, Safety programs,  
Manpower utilization,  
State government,  
Education

AVAILABILITY: CFSTI

HS-800 044 Fld. 3/0

#### SAFETY SPECIALIST MANPOWER. VOLUME 4. CONCLUSIONS AND RECOMMENDATIONS Booz-Allen, and Hamilton, Inc., Washington, D. C.

14 Oct 1968 548p  
Contract FH-11-6496

Conclusions and recommendations to the study of manpower utilization in highway safety. Supply and demand for this type of manpower is analyzed, with demand likely to rise until 1977, when safety programs should be fully staffed. Six categories of training are detailed. Policies to assure adequate manpower for highway safety staffing in future are recommended.

Search terms: Highway  
safety, Safety programs,  
Manpower utilization,  
State government,  
Education

AVAILABILITY: CFSTI

HS-004 401 Fld. 1/3, 3/0

#### REPORT OF THE COMMITTEE ON THE MEDICAL ASPECTS OF TRAFFIC ACCIDENTS by Wallace Troup Canadian Medical Association, Ottawa (Canada). Committee on the Medical Aspects of Traffic Accidents

Published in Canadian Medical  
Association Journal v91 p511-  
13 (5 Sep 1964)

Discusses many phases of accident problem and gives recommendations of committee on driver fitness, ambulance services, seat belts, head rests, driver training in high schools, drinking drivers, and research on accidents and highway safety.

Search terms: Accident  
data, Driver physical

fitness, Ambulances, Driver education, High school drivers, Seat belts, Head-rests, Safety research, Drinking drivers, Alcoholism, Highway safety

HS-004 403 Fld. 2/0, 3/0

#### HIGHWAY SAFETY SAVES MEN AND MONEY Anonymous

Published in Rural & Urban  
Press v5 n12 p4,8,14 (Dec  
1967)

Setting up a highway construction safety program at minimal cost, protecting work crews on high-speed expressways, proper job placement of the heart victim who is working, constructing a low-cost rotary mower guard and extinguishing an asphalt kettle fire were but a few of the life and money saving safety ideas which came out of the first Street, Road and Highway Division meeting of the National Safety Congress and Exposition.

Search terms: Highway  
safety, Safety programs,  
Construction, Personnel  
Work accidents, Accident  
prevention, Cost data,  
Conferences

HS-004 421 Fld. 4/7,3/0

#### MAN-MACHINE INTERACTION IN AUTOMOBILE DRIVING by N. Rashevsky

Published in Progress in  
Biocybernetics v1 p188-200  
(Jan 1964)

Mathematical modeling is used to study the complex car-driver feedback system. Variables considered are: speed, car length, turn reaction, the central nervous system. Author concludes that safe driving (accident avoidance) involves such purely external design factors as size and shape of car, size and shape of road as well as neuro-biophysical factors. The two kinds of factors cannot be meaningfully separated.

### 3/0 Human Factors (Cont.)

HS-004-421 (Cont.)

Search terms: Mathematical models, Accident prevention, Speed control, Turning, Motor vehicle design, Highway design, Reactions (Physiology), Driver-vehicle interface

HS-810 036 Fld. 3/0

MAN-KEY TO ACCIDENT CONTROL  
by Robert Brenner  
National Highway Safety  
Bureau, Washington, D. C.

26 Oct 1967 16p

Presented at the 1967  
National Safety Congress  
and Exposition, National  
Safety Council, Chicago,  
Ill.

Roles of driver behavior,  
attitudes, skills in causing  
accidents. Programs of the  
National Highway Safety  
Bureau: in developing stand-  
ards, collecting data, and  
promoting safety activities.

Search terms: Accident  
causes, Data acquisition,  
Driver attitudes, Driver  
behavior, Driver character-  
istics, Driver skills,  
National Highway Safety  
Bureau, Safety programs,  
Safety standards

AVAILABILITY: NHSB

HS-004 500 Fld. 1/3,3/0

THE PREVENTION OF HIGHWAY  
INJURY. PROCEEDINGS OF  
A SYMPOSIUM HELD APRIL 19-  
21, 1967, IN HONOR OF THE  
UNIVERSITY OF MICHIGAN'S  
SESQUICENTENNIAL CELEBRA-  
TION  
by Melvin L. Selzer,  
Paul W. Gikas, Donald F.  
Huelke  
Michigan Univ., Ann Arbor.  
Highway Safety Research  
Inst.

1967 305p

Report no. PB-176 624

Sponsored by Univ. of  
Michigan's Medical School  
and Highway Safety Research  
Institute

This symposium gives maxi-  
mum exposure to potential  
preventive programs in  
these areas: The Alcoholic  
Driver, Vision and Medical  
Impairment, Biomechanics,  
the Second Collision. The  
papers confirm the view that  
accidents and injuries can  
be significantly reduced  
now if only an effort is  
made.

Search terms: Injury  
prevention, Highway  
safety, Alcoholism, Vision,  
Handicapped drivers, Acci-  
dent prevention, Drinking  
drivers, Biomechanics,  
Secondary collisions, Mo-  
tor vehicle safety, Con-  
ferences

AVAILABILITY: From CFSTI as  
PB-176 624 (Includes HS-004  
501 to HS-004 530)

HS-004 509 Fld. 1/3,3/0

GROUP THERAPY AMONGST  
PERSONS INVOLVED IN  
FREQUENT AUTOMOBILE ACCI-  
DENTS

by William A. Tillmann,  
Lebert Harris, Margaret A.  
Phipps, John L. Howe

1967

Contract DA-49-007-MD-887

Two groups of male driver's  
(voluntary and coerced)  
with high accident history  
are used to determine if  
group psychotherapy might  
change their driving habits.  
Researchers conclude that  
this approach could con-  
tribute to an increased  
understanding of acci-  
dent behaviour. Some  
candidates benefitted,  
others were further threat-  
ened by the therapy.

Search terms: Driver  
behavior, Accident prone-  
ness, Accident prevention,  
Therapy, Psychological  
factors

AVAILABILITY: In Mich.  
Univ. Prevention of Highway  
Injury, p63-9 (HS-004 500)

Published in National Coopera-  
tive Highway Research Program  
Factors Influencing Safety  
at Highway-Rail Grade  
Crossings p82-105 (NCHRP-50)  
149 refs (1968)

Discusses the human factors  
approach: available sensory  
channels (vision, etc.)  
factors influencing prob-  
ability of signal detection;  
driver response to detected  
signals. Offers suggestions  
for development and evaluation  
of designing new warning  
systems.

Search terms: Human  
factors engineering,  
Warning systems,  
Railroad grade crossings\*,  
Grade crossings (highways)\*,  
Highway design, Driver  
behavior, Vision\*,  
Auditory perception,  
Skin (anatomy),  
Psychological factors,  
Signal devices

HS-004 592 Fld. 4/2,5/0,3/0

DOCTORS AND HIGHWAY SAFETY  
by George E. Shambaugh, Jr.

Published in Archives of  
Otolaryngology v80 n1  
p126-7 (Jul 1964)

Doctors are urged to take  
the lead in promoting seven  
proposals to solve the high-  
way safety problem: driver  
training courses, better  
driver license standards, the  
establishment of medical  
referral committees to screen  
out unfit drivers, the issu-  
ance of different classes  
of driver permits for private  
car, truck, and bus drivers,  
the control of drinking  
drivers, more severe penalti-  
es for speeding and reck-  
less driving, and better  
auto design. This article  
is an editorial commending  
proposals of Dr. Fletcher  
Woodward.

Search terms: Community  
support, Highway safety,  
Driver education, Driver  
physical fitness, Driver  
license standards, Driver  
licensing, Drinking drivers  
Bus drivers, Truck drivers.

### 3/0 Human Factors (Cont.)

HS-004-592 (Cont.)

Reckless driving, Unsafe speed, High speed, Motor vehicle design, Safety design, Penalties, Physicians\*, Editorials\*

HS-004 593 Fld. 4/2,5/0,3/0

SEVEN MEDICAL PROPOSALS TO PROMOTE HIGHWAY SAFETY by Fletcher D. Woodward

Published in Virginia Medical Monthly v90 n12 p611-8 (Dec 1963)

Doctors are urged to take the lead in promoting seven proposals to solve the highway safety problem: driver training courses, better driver license standards, the establishment of medical referral committees to screen out unfit drivers, the issuance of different classes of driver permits for private car, truck, and bus drivers, the control of drinking drivers, more severe penalties for speeding and reckless driving, and better auto design.

Search terms: Community support, Highway safety, Driver education, Driver physical fitness, Driver license standards, Driver licensing, Drinking drivers, Bus drivers, Truck drivers, Reckless driving, Unsafe speed, High speed, Motor vehicle design, Safety design, Penalties, Physicians\*

HS-800 043 Fld. 3/0

SAFETY SPECIALIST MANPOWER. VOLUME 2. MANPOWER RESOURCES Booz-Allen, and Hamilton, Inc., Washington, D. C.

14 Oct 1968 198p  
Contract FH-11-6496

Analysis of manpower levels needed for highway safety programs. Estimates are given by year from 1968 to 1977, organized into three skill levels: high school, one-three years college, and college skills.

If current recruitment policies continue, shortages of manpower are predicted. An inventory of existing and planned highway safety courses in state agencies and in selected colleges and universities is included.

Search terms: Highway safety, Safety programs, Manpower utilization, State government, Education

AVAILABILITY: CFSTI

HS-004 657 Fld. 5/0,3/0

WHY DIE IN AN AUTOMOBILE? Anonymous

Published in Journal of the Medical Association of the State of Alabama v33 n7 p214-5 (Jan 1964)

General recommendations to improve highway safety. Includes driver education for high school students, stricter driver license laws, motor vehicle inspection, seat belts, and community support for safety measures.

Search terms: Highway safety, Driver education, Driver license laws, Motor vehicle inspection, Seat belts, Community support, Safety measures, High school drivers

HS-810 049 Fld. 2/0,3/0,5/0

AUTOMOTIVE ENGINEERING EFFECTIVENESS IN STATE-COMMUNITY HIGHWAY SAFETY PROGRAMS by Bradford M. Crittenden National Highway Safety Bureau, Washington, D.C. Highway Safety Programs Service

15 Jan 1969 13p  
Presented at the International Automotive Engineering Congress and Exposition, Detroit, Mich.

Stresses the inseparability of components of highway safety and the need for

cooperative effort. Extends the safety triad of vehicle-highway-driver to include passenger-pedestrian relating Highway Safety performance standards to alcohol and pedestrian safety.

Search terms: Automotive design, Safety standards, Speeches\*, Highway safety, Alcoholic beverages, Crash phase, Pedestrian safety, Drinking drivers

AVAILABILITY: From corporate author

HS-004 676 Fld. 1/0,3/0

DISEASE CONTROL PROGRAMS. MOTOR VEHICLE INJURY PREVENTION PROGRAM Department of Health, Education, and Welfare, Washington, D. C.

Aug 1966 193p  
Report no. 1966-1

Motor vehicle accidents are considered a major health problem today. This report uses benefit-cost analysis to compare accident prevention and control programs. Some factors are: morbidity savings, reduction in driver drinking, injury avoidance, etc.

Search terms: Cost data, Motor vehicle accidents, Injury prevention, Benefit cost analysis\*, Driver licensing, Statistics\*, Accident research, Fatalities, Safety programs, Driver education, Emergency medical services, Drinking drivers, Pedestrian training, Seat belt usage\*, Motorcycle safety, Restraint systems

AVAILABILITY: From corporate author

HS-810 055 Fld. 2/0,3/0,5/0

DEPARTMENT OF TRANSPORTATION INTRA-DEPARTMENTAL SAFETY SEMINAR (1ST). PROCEEDINGS Department of Transportation, Washington, D. C.

### 3/0 Human Factors (Cont.)

HS-810-055 (Cont.)

Jan 1969 256p  
Seminar held 16-17 Dec 1968

Purpose of seminar was to interchange ideas among program managers of Coast Guard, Federal Aviation Administration, Federal Highway Administration, and Federal Railroad Administration, concerned with similar aspects of the safety field. Papers are grouped under four general topics: route and terminal safety, vehicle safety, the safe vehicle operator, and protection and care of the vehicle occupant.

Search terms: Occupant protection, Safety programs, Highway safety, Motor vehicle safety, Driver characteristics

AVAILABILITY: From corporate author (Includes HS-810 056 to HS-810 059)

HS-810 058 Fld. 2/0,3/0

#### THE SAFE VEHICLE OPERATOR (HIGHWAY)

by Robert Brenner  
National Highway Safety Bureau, Washington, D. C.

Discusses the role of the driver in accidents. Includes problems of the driver's physical and mental fitness, drinking patterns, attitudes, driver education, licensing, improvement courses for offenders, and other accident factors. Urges research on many of these problems and the use of driving simulation equipment.

Search terms: Driver characteristics, Driving simulation, Accident factors, Driving tasks, Driver attitudes, Driver licensing, Driver education, Driver improvement, Driver physical fitness, Drinking drivers, Driver records, Commercial driver training,

Driver intoxication,  
Blood alcohol levels\*,  
Fatalities, Drugs,  
Handicapped drivers

AVAILABILITY: In DEPARTMENT OF TRANSPORTATION INTRA-DEPARTMENTAL SAFETY SEMINAR (1ST). PROCEEDINGS, p165-94 (HS-810 055)

HS-004 804 Fld. 1/3,3/0

THE PUBLIC HEALTH SERVICE  
VIEWS AUTO SAFETY  
by Robert L. Price

Published in Journal of the Louisiana State Medical Society v119 n9 p355-7 (Sep 1967)

Outlines the motor vehicle accident problem, increase in the death rate, the higher incidence among males and young age groups, and gives figures on pedestrian accidents. Programs needed to reduce the accident toll are: improved driver licensing standards, improved driver training, control of drunk drivers, reducing pedestrian injuries, increasing seat belt use and improving restraint systems, increasing use of protective devices for motorcyclists, and improving emergency medical services.

Search terms: Highway safety, Motor vehicle accidents, Fatalities, Age factor in accidents, Sex factor in accidents, Driver license standards, Driver education, Drinking drivers, Driver intoxication, Pedestrian accidents, Accident prevention, Seat belt usage\*, Restraint systems, Motorcycle safety, Safety devices, Emergency medical services, Accident data, Injury prevention

HS-005 277 Fld. 3/0

#### RESEARCH ON TRAFFIC SAFETY—A VITAL NEED

by Fletcher N. Platt

Published in *Traffic Digest and Review* v12 n4 p10-2, 17 (Apr 1964)

Discusses the role of the driver as a

factor in accident causation and the driving task. Suggests that research is needed in the areas of driver training and driver improvement for problem drivers; safety factors of the auto, such as restraint systems; the effects of environment on the driving task; the driver's ability to control the vehicle; driver licensing; traffic flow. Outlines the problems of planning research in these areas.

Search terms: Accident causes; Restraint systems; Driver education; Driver improvement; Problem drivers; Motor vehicle handling; Driver licensing; Traffic flow; Driver skills; Driving tasks; Driver behavior; Safety research; Environmental factors

HS-800 154 Fld. 1/3; 3/0; 5/0

#### A STUDY OF SEVERE VEHICULAR ACCIDENTS. PHASE 2. FINAL REPORT

by Fleming L. Jolley; Paul H. Wright  
Georgia Inst. of Tech., Atlanta.  
School of Civil Engineering

Feb 1969 186 p  
Contract FH-11-6797

Results are given of a study of 20 severe automobile collisions in Atlanta, analyzed by a medico-engineering team. Research included an epidemiological study of factors causing accidents as well as a study of the secondary collisions to establish the kinematics of the occupants and to identify the factors causing injury and death. A pilot study preceding this work described the training of the medico-engineering team. This report describes selection criteria for the accidents studied and the methods of study used. Recommendations for accident prevention and injury prevention and treatment are included. Attempts are made to find the probable cause of each accident.

Search terms: Defective vehicles; Case reports\*; Collisions (accidents); Atlanta\*; Accident analysis; Accident causes; Accident investigation; Accident prevention; Secondary collisions; Kinematics; Injury factors; Fatalities; Costs\*; Damage; Injury prevention; Medical treatment; Human factor engineering; Accident severity

### 3/0 Human Factors (Cont.)

#### HS-800-154 (Cont.)

Environmental factors; Hazards; Driver behavior; Accident location; Drinking drivers; Psychological factors

AVAILABILITY: Corporate author

HS-820 030 Fld. 1/0; 2/0; 3/0; 5/0

HIGHWAY SAFETY LITERATURE. COMPILATION OF ISSUES NUMBERED 1 THRU 52 ISSUED DECEMBER 1967 THRU DECEMBER 1968

National Highway Safety Bureau, Washington, D.C.

Jul 1969 411p

Contains HS-000 001-HS-004 302; HS-800 001-HS-800 052. For index to this volume by current subject categories see HS-820 052.

This publication brings together all citations appearing in *Highway Safety Literature's* first 52 issues from December 1967 through December 1968. The annotated citations appear under five broad categories with 53 subdivisions, reflecting the Bureau's safety standards and research interests.

Search terms: Highway safety; Motor vehicle safety; Human behavior; Motor vehicle accidents; Bibliographies

AVAILABILITY: CFSTI

HS-005 897 Fld. 1/3; 3/0

FATAL MOTOR VEHICLE ACCIDENT STUDY

Medical Lab. (10th), New York, APO 09180

Sep 1967 44p 11 refs

Includes covering letter to Commanders of USAREUR major commands and assigned units and activities, and discussion of film "For Those Who Drink"

Drivers involved in 540 fatal motor accidents were compared to matched control subjects. Control group were found to have significantly fewer

numbers with uncorrected defective vision and histories suggestive of behavior or personality disorder than the group involved in fatalities. Two-thirds of the autopsied drivers showed blood alcohol. Carbon monoxide was found in one-third of the specimens. The majority of the fatal accidents occurred in two-lane, undivided highways under good driving conditions and without use of seat belts.

Search terms: Drinking drivers; Fatalities; Vision disorders\*; Human behavior; Alcoholic beverages; Carbon monoxide; Autopsies; Seat belt usage\*; Blood analysis\*; Drugs; Synergism\*; Accident data; Psychological tests; Questionnaires\*; Blood alcohol levels\*; Driver intoxication; Motor vehicle accidents; Problem drivers

AVAILABILITY: CFSTI as AD-691 358

HS-005 901 Fld. 5/0; 3/0

AUTOMOTIVE SAFETY SEMINAR. GENERAL MOTORS CORPORATION PROCEEDINGS

General Motors Proving Ground, Milford, Mich.

11-12 Jul 1968 334p 119 refs

These 32 papers are intended primarily to describe some of the work being done by General Motors as part of its automotive safety research, with an emphasis on future progress. Some papers discuss vehicle characteristics in terms of ideals. Many papers discuss laboratory testing. While these tests are important to safety improvement, they do not assure reliability or feasibility on the road.

Search terms: Safety research; Motor vehicle design; General Motors Corp.\*; Motor vehicle safety; Impact tests; Laboratory tests

AVAILABILITY: Corporate author (Includes HS-005 902 to HS-005 935)

HS-810 083 Fld. 1/3; 2/0; 3/0; 5/0

MYTHS AND MISCONCEPTIONS IN TRAFFIC SAFETY

by William E. Tarrants

National Highway Safety Bureau, Washington, D.C.

Published in *Robot* n43 p2-7 (Apr-May 1969)

Author recommends meeting immediate need of traffic safety with action programs based on intuition until research can provide scientific evidence for specific programs. The concepts of "accident prevention," deviant drinkers and accidents, driver behavior, pedestrian control, safety posters, and driver education are discussed, with emphasis regarding misconceptions. The contribution to accidents by vehicle design and highway design is mentioned. The importance of reliable investigation and reporting of all the causes of accidents is pointed out.

Search terms: Social drinking\*; Safety programs; Accident prevention; Alcoholism; Drinking drivers; Pedestrian intoxication; Safety propaganda; Pedestrian safety; Driver education; Highway safety; Motor vehicle safety; Accident causes; Accident reports; Accident investigation; Blood alcohol levels\*; Traffic safety; Automobile design; Highway design

HS-006 042 Fld. 1/0; 3/0

TRAFFIC "ACCIDENTS", A MEDICAL VIEWPOINT. PART I

by Julian A. Waller

Published in *Automotive Industries* v136 n8 p87-90 (15 Apr 1967)

Severe accidents are discussed in three major aspects: (1) when the involved drivers or pedestrians frequently have identifiable impairment as alcoholism; (2) the frequent inadequacy of the packaging of the fatally injured as automobile defects and lack of protective clothing; and (3) location of the accident where early and adequate assistance may be available only by chance.

Search terms: Traffic accidents; Pedestrian accidents; Fatalities; Protective clothing\*; Motor vehicle safety; Accident severity; Injuries; Handicapped drivers; Alcoholism; Medical factors; Diseases; Packaging; Motor vehicle design; Drinking drivers; Defective vehicles; Accident location; Emergency medical services

### 3/0 Human Factors (Cont.)

HS-006 043 Fld. 1/0; 3/0

#### TRAFFIC "ACCIDENTS", A MEDICAL VIEWPOINT PART 2

by Julian A. Waller

Published in *Automotive Industries* v136 n10 p92-4 (15 May 1967)

Interactions of the laws of sociology, psychology, and physiology as factors in accident occurrence are covered in detail. Countermeasures suggested to reduce accident toll include the removal of impaired drivers from the road, utilization of a different system of transportation, modification of training and driver behavior, modification of environment to simplify driver tasks, and improvement of emergency medical services.

Search terms: Traffic accidents; Human behavior; Packaging; Driving tasks; Sociological aspects; Psychological aspects; Physiology; Accident factors; Driver education; Emergency medical services; Accident severity; Pedestrian accidents; Alcoholism; Handicapped drivers; Drinking drivers; Medical factors; Violations; Accident research

HS-006 047 Fld. 2/0; 3/0

#### MEDICAL ASPECTS OF DRIVER LICENSURE: PUBLIC HEALTH SERVICE RECOMMENDATIONS

by Richard Marland; Eugene L. Lehr  
Environmental Control Administration, Cincinnati, Ohio. Injury Control Program

The Public Health Service developed criteria dealing with driver impairment for medical advisory boards. Functional classifications include: Alterations of consciousness, cardiovascular function, hearing, mental condition, musculoskeletal performance, respiratory function, and vision.

Search terms: Medical Advisory Boards\*; Driver licensing; Driver physical fitness; Medical factors; Musculoskeletal system; Respiratory system; Public Health Service\*; Driver license standards; Handi-

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p3-8 (HS-006 046)

HS-006 048 Fld. 2/0; 3/0; 5/4

#### HUMAN FACTORS IN DRIVER RESEARCH

by Dennis J. Sullivan; David Meister  
Bunker-Ramo Corp., Canoga Park, Calif.

5 refs

A brief description of the nature of human factors, its areas of concern, the nature of its techniques and how it relates to the medical, biomechanical, and physiological aspects of automotive safety is provided.

Search terms: Human factors engineering; Safety design; Automobile design; Driver performance; Driver behavior; Man machine systems; Motor vehicle handling; Biomechanics; Decision making\*; Instrument panels

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p9-37 (HS-006 046)

HS-006 493 Fld. 1/3; 3/0

#### THE ROLE OF HUMAN FACTORS IN ACCIDENT PREVENTION

by Frank Freeman; Charles E. Goshen; Barry G. King

Operations Research, Inc., Silver Spring, Md.

119p 78 refs  
Contract A5ph-73670

Concerned with human factors which influence the liability of man to accident involvement of all types, this study covers several topics of value to the highway safety effort: accident prevention programs, the role of human factors in accidents by age groups, methods of data collection in accident research. The final section of the report presents a national philosophy of safety: that the principal safety effort should be directed

Search terms: Accident prevention; Accident proneness; Attitudes; Safety campaigns; Data acquisition; Highway safety; Driver behavior; Pedestrian behavior; Fatalities; Public transportation; Epidemiology; Age factor in accidents; Accident causes; Physicians; Physical fitness

AVAILABILITY: Public Health Service, Washington, D. C. 20201

HS-004 635 Fld. 3/0, 4/2

#### PHYSICIANS AND TRAFFIC SAFETY Anonymous

Published in *Canadian Medical Association Journal* v90 p1422-3 (20 Jun 1964)

Urges physicians to play a role in traffic safety efforts by reporting to authorities patients who are unfit to drive, by cautioning patients about the effect of drugs on their driving ability, by advising patients on highway safety, by promoting driver training courses, and by setting an example of good driving and seat belt usage.

Search terms: Highway safety; Community support; Driver physical fitness; Driver education; Drugs; Seat belt usage\*; Seat belts; Physicians\*; Editorials\*

### 3/1 ALCOHOL

HS-004 305 Fld. 3/1

#### PREVENTION OF DRUNKEN DRIVING

by Carl S. Alexander

Published in *New England Journal of Medicine* v274 p1446 (Mar 1968)

Suggest a device to prevent a drunk person from starting a car. A "drunkometer" would be attached to ignition by relay. Driver would have to breathe into it and if alcohol concentration were too high, ignition would not function.

Search terms: Drinking drivers; Intoxication; Ignition systems; Breath analysis

HS-004 324 Fld. 3/1

#### "BAG TEST" HELPS KEEP DRIVERS SOBER: A REPORT ON BRITAIN'S ROAD SAFETY ACT OF 1967

by Richard O. Bennett, Emerson H. Westwick

Published in *Police Chief* v35 n11 p38-46 (Nov 1968)

Reaction to the recently enacted British Road Safety Act is described by two American insurance officials. They conclude that since the Act has had little effect on the actual quantity of alcohol consumed, the drop in motor vehicle crashes will not continue unless enforcement of this law is stepped up.

Search terms: Alcohol beverages; Drinking drivers; Legislation; Enforcement; Highway safety; Accident prevention; Great Britain

HS-004 325 Fld. 3/1

#### REPORT ON OPERATION OF ORS 482,477 (OCCUPATIONAL DRIVER LICENSES). FIRST DUIL CONVICTION

by Vern L. Hill

Oregon. Dept. of Motor Vehicles

[1968] 10p

Oregon law ORS 482.477 provides a special occupational license when a regular license is revoked under DUIL (Driving Under the Influence of Liquor). This report briefly details operations under the new amendment; 35% of persons convicted under DUIL have been recommended for the special license. Some courts have been making ineligible recommendations, others reduce Duil charges. Report also notes failure of repeated fines, jail sentences, license suspension, etc. to effectively control the alcoholic driver in Oregon.

Search terms: Oregon; Driver license revocation; Drinking drivers; Alcoholism; Courts; Legislation; Professional drivers

AVAILABILITY: Corporate author

HS-004 326 Fld. 3/1

#### SOCIAL DRINKING AND BLOOD ALCOHOL LEVELS

by W. J. Pryor

Published in *New Zealand Medical Journal* v65 n410 p689-90 (1966)

Most reports of blood alcohol levels have been from artificial conditions; this article examines BAL under normal social conditions. It concludes that one would need to drink almost a bottle of wine, with the appropriate food, before transgressing the 100 mg level suggested by the British Medical Association as being unsafe for driving.

Search terms: Alcoholic beverages; Blood alcohol levels; Food; Drinking drivers

HS-004 327 Fld. 3/1

#### A STUDY OF THE ACCURACY OF THE BREATHALYZER AS OPERATED BY POLICE PERSONNEL

by J. R. Howes, R. A. Hallett, D. M. Lucas

Published in *Journal of Forensic Sciences* v12 n4 p444-53 (Oct 1967)

Presented at American Academy of

Forensic Sciences, Honolulu, Hawaii, 19th annual meeting, Feb. 19-25, 1967

Compares results of 1,172 Breathalyzer tests made by police during training courses and 114 blood tests. When two Breathalyzer tests are properly made, results are accurate enough not to be prejudicial to persons accused of drunk driving.

Search terms: Drinking drivers; Police; Blood alcohol levels; Blood analysis; Breath analysis; Breathalyzer; Driver Intoxication

HS-004 328 Fld. 3/1; 3/7

#### TOXICOLOGICAL STATISTICS FOR BARBITURATES' OTHER SEDATIVES, AND TRANQUILLIZERS IN ONTARIO: A 10-YEAR SURVEY

R. C. Gupta, J. Kofoed

Published in *Canadian Medical Association Journal* v94 p863-5 (16 Apr 1966)

There is a steady increase in cases of drug poisoning. Postmortem blood specimens from hospitals and urine and blood samples from persons charged with driving under influence of drugs were examined. Patients should be warned that combining alcohol and barbiturates is dangerous, and that barbiturates even without alcohol can adversely affect their driving ability. Other drugs can also be dangerous to drivers.

Search terms: Barbiturates; Sedatives; Tranquilizers; Accident causes; Alcoholic beverages; Poisoning; Blood analysis; Urine; Drugs; Physiological effects; Driver intoxication

HS-004 382 Fld. 3/1

#### BLOOD-ALCOHOL LEVELS AND THE DRIVER

by Sidney Kaye

Published in *Boletín de la Asociación Médica de Puerto*

### 3/1 Alcohol (Cont.)

HS-004-382 (Cont.)

Rico (Santurce) v56 n4 p115-9 (Apr 1964)

The drinking driver problem is increasing. Driving judgment is impaired before the driver becomes obviously intoxicated. The absorption of alcohol and its physiological effects are discussed.

Search terms: Accident causes, Alcoholic beverages, Blood alcohol levels, Drinking drivers, Intoxication

HS-004 409 Fld. 3/1

THE USE OF THE BREATHALYZER IN THE DETERMINATION OF BLOOD ALCOHOL CONCENTRATIONS by George W. Pennington, Terence Brien

Published in Journal of the Irish Medical Association v54 p107-9 (Apr 1964)

Two methods of estimating blood alcohol levels have been studied. A direct comparison has been made between the blood alcohol concentration when estimated by a standard technique using the Conway microdiffusion apparatus, and the concentration estimated from the amount contained in samples of breath. A good correlation has been found between these two methods.

Search terms: Blood alcohol level, Blood analysis

HS-004 410 Fld. 3/1

A WISE MOVE FOR THE HOLIDAYS by Walter Oleksy

Published in Analogy p11-3 (Win 1969)

Heavy drinkers are causing most of traffic deaths. Sociology of drinking drivers is outlined. Suggestions to help curb alcoholics from driving are given, especially implied consent laws.

Search terms: Alcoholism, Drinking drivers, Accident causes, Fatalities, Implied consent laws, Sociological aspects

HS-004 481 Fld. 3/1

DRINKING AND DRIVING  
Anonymous

Published in FBI Law Enforcement Bulletin v37 n12 p12-4 (Dec 1968)

Describes the Road Safety Act in Great Britain and the tests and penalties established for drinking drivers.

Search terms: Great Britain, Drinking drivers, Road Safety Act (Great Britain), Breath analysis, Blood analysis, Alcoholic beverages, Penalties, Driver license suspension

HS-004 482 Fld. 3/1

LEGISLATION TO CONTROL THE DRINKING DRIVER by Rankin Hay, D. W. Penner

Published in Manitoba Medical Review v45 p367, 369, 371 (Jun-Jul 1965)

Presented at the 11th Conference of the Canadian Highway Safety Council, May 3, 1965

Problems relating to drinking & driving have been made unnecessarily complex and almost impossible to solve because efforts have been directed towards emotional & irrelevant factors. Facts concerning the Canadian situation and solutions are offered.

Search terms: Drinking drivers, Legislation, Canada

HS-004 504 Fld. 1/3,3/1

DRINKING, DRIVING AND DEATH; AN OVERVIEW by Robert A. Moore

1967 96 refs

Reviews data and opinions about the effects of alcohol

on driving skills; the correlation between drinking, driving, and accidents; personality factors correlated with accidents. The problems of prevention by education and punishment alone are discussed, followed by general suggestions for a more effective program for prevention.

Search terms: State of the art studies, Alcoholism, Drinking drivers, Driving skills, Penalties, Accident prevention

AVAILABILITY: In Mich. Univ. Prevention of Highway Injury, p21-9 (HS-004 500)

HS-004 505 Fld. 1/3,1/2

DRINKING DRIVERS AND DRIVING DRINKERS--THE NEED FOR MULTIPLE APPROACHES TO ACCIDENTS INVOLVING ALCOHOL by Julian A. Waller

1967 28 refs

Persons involved in accidents & violations after drinking can be classified into several diagnostic groups, most--but not all--of which involve psychosocial pathology. Preventive education must consider the diversity of drinking patterns rather than blindly assuming that social drinking is the major correlate to accidents after drinking.

Search terms: Drinking drivers, Alcoholism, Accident prevention, Personality, Safety programs, Accident risks, Psychological factors, Treatment

AVAILABILITY: In Mich. Univ. Prevention of Highway Injury, p30-7 (HS-004 500)

HS-004 506 Fld. 1/3,3/1

RESPONSIBILITY, BLOOD ALCOHOL LEVELS AND ALCOHOLISM by Reginald G. Smart, Wolfgang Schmidt  
Alcoholism and Drug Addic-

### 3/1 Alcohol (Cont.)

HS-004-506 (Cont.)

tion Research Foundation,  
Toronto, Ont. (Canada)

1967 23 refs

The blood alcohol levels of alcoholics in accidents, their responsibility for their accidents, and the characteristics of their accidents, are compared with other drivers in alcohol-related accidents. On the average, the alcoholic drivers had blood alcohol levels twice as high as the nonalcoholic drinker.

Search terms: Blood alcohol levels\*, Alcoholism, Accidents, Drinking drivers, Driver Behavior

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury p32-43 (HS-004 500)

HS-004 507 Fld. 1/3,3/1

A SCREENING PROGRAM TO  
DETECT ALCOHOLISM IN  
TRAFFIC OFFENDERS  
by N. J. Ehrlich, M. L.  
Selzer  
1967

Four points in the development of a screening program to detect alcoholism are: 1) the need for recognition of alcoholics as a group among traffic offenders; 2) the development of a detection test; 3) the results of experimental procedures used in the test; and 4) possible corrective measures.

Search terms: Alcoholism, Questionnaires, Drinking drivers, Driver licensing, Diagnosis\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p44-50 (HS-004 500)

HS-004 508 Fld. 1/3,1/2

DETERRENTS TO DRINKING  
AND DRIVING AND DRIVING  
IN ALCOHOL MISUSERS  
by Bernard H. Fox  
Public Health Service,  
Arlington, Va. Injury  
Control Program

1967 27 refs

Deterrents (rehabilitation, improved apprehension) and countermeasures (legislative, physiological, accident avoidance, detection of alcoholics and pre-alcoholics) are discussed. Several models of distribution of blood alcohol changes brought about by hypothetical deterrents, with estimated reduction of accidents are also presented.

Search terms: Drinking drivers, Alcoholism, Accident prevention, Accident reduction, Blood alcohol levels\*, Diagnosis\*

AVAILABILITY: In Mich  
Univ. Prevention of Highway Injury, p51-62 (HS-004 500)

HS-004 510 Fld. 1/3,3/1,3/7

THE COMBINED EFFECT OF  
ETHANOL AND OTHER DRUGS  
by Robert B. Forney

1967 34 refs

Current equipment is not sufficiently sophisticated to develop the most pertinent information on the combined effect of alcohol and other drugs. Some of the current techniques discussed are: the Gymkana experiment; Delayed Auditory Feedback (DAF); and the Pursuit Meter (PM). A national effort in collecting and analyzing blood from traffic accident victims is recommended.

Search terms: State of the art studies, Alcohols, Drugs, Barbiturates\*, Tranquilizers\*, Narcotics\*, Blood analysis, Physiological effects, Synergism\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p70-7 (HS-004 500)

HS-004 511 Fld. 1/3,3/1

RESEARCH ON THE ALCOHOLIC  
DRIVERS: A CRITIQUE  
by Anatol Rapoport

1967

In considering the role of alcohol in traffic accidents there seems to be no question of finding & isolating one specific causative agent. Traffic fatalities might possibly be dealt with socially as diseases are dealt with in an organized society. Then the degree of social effort required for change is diffuse rather than concentrated.

Search terms: Alcoholism, Drinking drivers, Accident research, Sociological aspects, Accident causes, Variables\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p78-85 (HS-004 500)

HS-004 539 Fld. 2/4,3/1

RESEARCH ON ROAD SAFETY  
by D. J. Lyons

Published in Journal of the Institution of Municipal Engineers v95 n9 p278-282 [1968]

Cost benefit concepts are being used in Great Britain in formulating research programs and evaluating the success of work undertaken. The cost of determining the effects of alcohol on driving was small, and the resulting legislation has reduced deaths and injuries considerably. Discusses research underway in skid prevention, crash barrier design, road junction design, standardized front lighting of vehicles, driver psychology and reactions.

Search terms: Accident prevention, Costs, Alcohol-

### 3/1 Alcohol (Cont.)

HS-004-539 (Cont.)

ism, Drinking drivers, Injury prevention, Legislation, Great Britain\*, Fatalities, Skidding, Barrier design, Intersections, Headlights, Lighting design, Driver behavior, Psychology, Reactions (physiology), Cost effectiveness\*, Costs

HS-004 586 Fld. 3/1, 3

ALCOHOL AND HIGHWAY ACCIDENTS  
by William Haddon, Jr.  
New York (State). Dept.  
of Health, Albany

12p 51refs

Published in British  
Medical Association  
Proceedings of the Third  
International Conference on  
Alcohol and Road Traffic  
London (Sep 1962)

This review paper covers  
most of the evidence on the  
contribution of alcohol and  
of the different types of  
drinkers to highway safety,  
as known in 1962. It classifies  
a standard method of  
tabulation and their  
justification.

Search terms: Alcoholic  
beverages, Highway accidents,  
Accident records, Motor vehicle  
accidents, Fatalities, Drinking  
drivers, Alcoholism, Bibliographies,  
Accident causes

HS-004 587 Fld. 3/1

THE DRINKING DRIVER  
Anonymous

Published in Canadian  
Medical Association Journal  
v92 p1276 (12 Jan 1965)

Discusses the problem of  
determining at what point  
driving ability is impaired  
by drinking. Recommends the  
establishment of a blood alcohol  
concentration of 80 mg.  
per 100 ml. as evidence justifying  
a conviction for drunk  
driving.

Search terms: Drinking  
drivers, Blood alcohol  
levels\*, Intoxication,  
Driver physical fitness

HS-004 636 Fld. 3/1

BLOOD ALCOHOL AND DRIVING  
by Ivan Harper

Published in New Zealand  
Medical Journal v65 n409  
p626 (Sep 1966)

Suggests that drunken driving  
legislation should not be  
put off because of the  
variables involved in individual  
response to alcohol and  
difficulty in determining  
the exact impairment of  
physiological function. Argues  
that punishment for reckless  
drinking is as necessary as  
punishment for reckless driving.

Search terms: Drinking  
drivers, Physiology, Alcoholic  
beverages, Intoxication, Driver  
physical fitness, Legislation

HS-004 637 Fld. 3/1

"UNFIT TO DRIVE". PROCEDURE  
UNDER THE ROAD TRAFFIC ACT,  
1962  
Anonymous

Published in British Medical  
Journal v1 n5331 p665-6  
(9 Mar 1963)

Describes what doctors should  
know about the medical  
implications of the Road Traffic  
Act of 1962, which has altered  
the procedure for examining  
those suspected by the police  
as being drunk drivers and  
has changed the responsibilities  
for doctors who may give  
evidence in court about the  
suspect's driving ability.  
Procedures for collecting  
blood and urine specimens of  
suspected drivers are outlined.

Search terms: Drinking  
drivers, Driver physical  
fitness, Legal factors,  
Medical factors, Urine\*,  
Blood alcohol levels,  
Great Britain\*, Alcoholic  
beverages

HS-004 655 Fld. 4/1, 1/3, 3/1

LEGAL PROBLEMS INVOLVED IN  
THE DEVELOPMENT OF LEGISLATION  
by J. Dudley Digges

Published in Maryland State  
Medical Journal v16 p63-6  
(Jan 1967)

Judicial processes are  
breaking down because of  
caseloads 85% of which are  
concerned with motor vehicle  
accidents. Discusses implied  
consent laws providing for  
blood analysis of suspected  
drunk drivers. Constitutionality  
of these laws has been upheld  
by the Supreme Court. Suggests  
that ways be set up to revoke  
driver licenses without court  
procedure.

Search terms: Drinking  
drivers, Implied consent laws\*,  
Blood alcohol levels\*, Courts,  
Driver license revocation,  
Legal factors, Motor vehicle  
accidents, Supreme Court\*

HS-800 070 Fld. 3/1, 1/3

MISSOURI IMPLIED CONSENT  
STATUTES. FINAL REPORT  
by Edward H. Hunn, Jr.,  
Franklin E. Zimring  
American Bar Foundation,  
Chicago, Ill.

Aug 1968 122p  
Contract FH-11-6687

Purpose of the study was to  
examine available records  
which might help measure  
the effects of implied  
consent; and the effects  
of adopting an implied  
consent law. Conclusions  
indicated that more and  
better records are necessary  
for more meaningful research;  
no substantial indication  
that implied consent laws  
reduce drunk driving below  
levels experienced in the  
absence of implied consent;  
implied consent laws make  
administration of the  
drunk driving laws easier.

Search terms: Accident  
records, Blood alcohol  
levels\*, Convictions,  
Drinking drivers,

### 3/1 Alcohol (Cont.)

HS-800-070 (Cont.)

Driver intoxication,  
Driver license revocation,  
Implied consent laws\*,  
Law enforcement\*,  
Missouri\*, Police,  
Single vehicle accidents

AVAILABILITY: From CFSTI

HS-004 683 Fld. 1/3,3/4,3/1

RESEARCH IN TRAFFIC ACCIDENT  
PREVENTION: AN OVERVIEW OF  
RESEARCH SUPPORTED BY THE  
PUBLIC HEALTH SERVICE, U.S.  
DEPARTMENT OF HEALTH, EDUCA-  
TION AND WELFARE  
by Leon G. Goldstein

Published in Traffic Safety  
v11 n2 p50-6 (Jun 1967)

Outlines research being  
carried on in crash injuries,  
accident studies, driver  
behavior, drinking drivers  
and pedestrians, seat belt  
usage, simulation, driver  
improvement and education,  
traffic flow, effect of  
drugs on driving behavior,  
pedestrian accidents, and  
effects of carbon monoxide  
on driving behavior.

Search terms: Accident  
research, Accident pre-  
vention, Injury research,  
Crash research, Driver  
behavior, Drinking drivers,  
Alcoholic beverages, Simu-  
lation, Pedestrian behavior,  
Driver education, Driver  
improvement, Traffic flow,  
Pedestrian accidents,  
Drugs, Carbon monoxide,  
Seat belt usage\*, Seat  
belts, Public Health  
Service\*

HS-004 686 Fld. 2/0,3/1

FOCUS ON COUNTIES  
by Warren P. Knowles

Published in Traffic Safety  
v69 n1 p8-9,38 (Jan 1969)

The governor of Wisconsin  
tells how his state used  
the National Safety Council's  
Highway Safety Program

Analysis to study county  
traffic operations. The  
need for an implied consent  
law at county level is  
also discussed.

Search terms: Rural  
areas, Drinking drivers,  
Safety programs, Blood  
alcohol levels\*, National  
Safety Council\*, Local  
government\*, Wisconsin\*,  
State government,  
Alcoholism

HS-004 695 Fld. 3/1

BETTER ROADS, FEWER ACCIDENTS,  
MORE FATALITIES

Published in South African  
Medical Journal v38 n35  
p815 (17 Oct 1964)

Suggests that breath alcohol  
tests should be obligatory in  
all cases where an accident  
has occurred, and that drunken  
drivers should be punished  
more severely. Also suggests  
that high-speed modern roads  
are more dangerous than older,  
slower roads and that the  
building of "speedways"  
should be restricted. Article  
deals with the problems in  
South Africa.

Search terms: Republic of  
South Africa\*, High speed,  
Breath analysis, Drinking  
drivers, Alcoholic beverages,  
Accident causes, Highway  
characteristics. Editorials\*

HS-004 696 Fld. 3/1

THE PROBLEM OF THE DRINKING  
DRIVER

by Roger C. Cramton

Published in American  
Bar Association Journal  
v54 p995-9 (Oct 1968)

The scientifically reliable  
knowledge we now are acquir-  
ing indicates that our legal  
approaches of deterrence  
and punishment fail to strike  
at the heart of the drinking  
driver problem. Some sugges-  
tions such as treatment of  
problem drinking drivers  
are offered for a new course.

Search terms: Drinking  
drivers, Penalties, Blood

alcohol levels, Driver  
performance, Traffic law  
enforcement, Alcoholism,  
Legislation

### NHSB CONTRACTOR REPORTS

HS-800 083 Fld. 3/1

ALCOHOL SAFETY STUDY: DRIVER  
WHO DIE. FINAL REPORT 1968  
by Stuart L. Brown,  
Philip J. Bohnert  
Baylor Univ., Houston, Tex.  
Coll. of Medicine

1968 174p 24 ref  
Contract FH-11-6603

An in-depth psychiatric  
analysis of 25 consecutive  
traffic fatalities and 25  
control subjects determines  
the extent that alcohol,  
personality, and stress  
interact to result in a  
fatal crash. Recommendation  
cover 5 areas: diagnosis and  
treatment, legal changes, and  
education and research.

Search terms: Alcoholism,  
Drinking drivers,  
Fatalities, Personality,  
Psychological examination  
Driver skills, Autopsies\*,  
Surveys, Blood-alcohol  
levels\*

AVAILABILITY: From CFSTI

HS-800 084

ALCOHOL SAFETY STUDY: THE  
SOCIAL ECOLOGY OF VIOLENT  
DEATH IN A METROPOLITAN  
COMMUNITY. A COMPARISON OF  
TRAFFIC FATALITIES AND  
OTHER CAUSES OF DEATH.  
FINAL REPORT 1968  
by Robert E. Roberts,  
George W. McBee  
Baylor Univ., Houston, Tex.  
Coll. of Medicine

1968 82p  
Contract FH-11-6603

Supplement to ALCOHOL  
SAFETY STUDY: DRIVERS WHO  
DIE, FINAL REPORT 1968  
(HS-800 083)

Epidemiological analysis of  
mortality pattern in Houston  
correlates individual charac-  
teristics, geographic distribu-

### 3/1 Alcohol (Cont.)

HS-800-084 (Cont.)

bution, social, economic and demographic measures with age-standardized rates for 6 categories of death: traffic, homicide, suicide, other violent, other (natural) causes, and all causes.

Search terms: Accident causes, Urban areas, Fatalities, Suicide\*, Homicide\*, Socioeconomic data, Traffic accidents, Demography\*, Surveys

AVAILABILITY: From CFSTI

HS-004 759 Fld. 3/1

THE DRINKING DRIVER  
by Simon Freeman

Published in British Medical Journal v2 p1634-6  
(26 Dec 1964)

Describes 392 persons arrested for drunk driving in Manchester, England. Most were in the 20-40 age group, only 1% were teenage drivers, and all were male. Of those charged, 97% were convicted in magistrates' courts, but only 49% with jury trials. Penalties are not high enough to be effective. Diagnosis was made by clinical signs with limited use of urinalysis.

Search terms: Driver intoxication, Drinking drivers, Adolescent drivers, Penalties, Convictions, Courts, Sex factors, Age factors, Great Britain\*, Diagnosis\*, Urinalysis\*

HS-004 760 Fld. 3/1

THE PHARMACOLOGY OF  
DRIVING AND THE LAW, WITH  
SPECIAL REFERENCE TO  
ALCOHOL

by P. J. Cannon,  
G. W. Pennington

Published in Journal of the Irish Medical Association  
v50 p137-42 (May 1962)

Discusses the physiological phenomena following alcohol ingestion and the relationship between drinking and road accidents. Recommends that it should be an offense to drive with a blood alcohol level higher than 50 mg/100 ml, and that it should be an offense to drive while under the influence of drugs or alcohol and unable to exercise reasonable care and skill. Reviews legislation of various countries on this subject and discusses methods of detecting drugs in the body fluids.

Search terms: Driver physical fitness, Drinking drivers, Driver intoxication, Alcoholic beverages, Accident causes, Careless driving, Legislation, Blood alcohol levels\*, Drugs, Breath analysis\*, Chemical analysis, Implied consent laws\*, Traffic accidents, Urinalysis\*

HS-004 761 Fld. 3/1

TRAVELOGUE ON DRUNKEN  
DRIVING  
by Ellis M. Markell

Published in Medical Times  
v94 n7 p816-21 (Jul 1966)

Outlines the police procedures for dealing with drunk drivers in England, France, Holland, Denmark, and Sweden.

Search terms: Driver intoxication, Drinking drivers, Police traffic services, Blood alcohol levels\*, Great Britain\*, France\*, Netherlands\*, Denmark\*, Sweden\*, Handwriting tests\*, Urinalysis\*

HS-004 762 Fld. 3/1

WYOMING'S ALCOHOL INVOLVEMENT  
REFERRAL PROGRAM: A REPORT  
by Frank W. Hicks

Published in Traffic

Digest and Review v17 n1  
p9,10,23 (Jan 1969)

Wyoming's "Alcohol Involvement Referral Program" may possibly eliminate some potentially dangerous drivers from the highway, and also provide rehabilitation assistance for the families of alcoholics. It is a cooperative program between judges and regional mental health centers.

Search terms: Drinking drivers, Alcoholism, Traffic law enforcement, Safety programs, Mental illness, Traffic courts, Wyoming\*

HS-004 881 Fld. 3/7,3/1

ALCOHOL + DRUGS  
by R. B. Forney,  
F. W. Hughes

Published in Traffic Safety v67 n6 p22-4,  
34-6 (Jun 1967)

Discusses reactions which may occur when a driver takes a drug and then has a few drinks, for example, morphine and caffeine potentiate effects of alcohol, codeine does not. Barbiturates, tranquilizers, narcotics, etc. are discussed.

Search terms: Medical treatment, Synergism\*, Alcoholism, Barbiturates\*, Driver intoxication, Tranquilizers\*, Narcotics\*, Amphetamines\*, Test equipment, Antidepressants\*

HS-004 943 Fld. 3/1

ALCOHOL, DRUGS AND DRIVING  
by Nicholas J. Chetta

Published in Journal of the Louisiana State Medical Society v119 n9 p344-7  
(Sep 1967)

Drugs have a minimal effect on motor vehicle fatalities; alcohol is a proved causative agent. Alcoholism also contributes to traffic fatalities by its effect on recovery after injury.

### 3/1 Alcohol (Cont.)

HS-004-943 (Cont.)

Highest number of fatalities occurs at the social drinking level of 0.10 to 0.14 per cent.

Search terms: Fatalities, Traffic accidents, Alcoholism, Drugs, Drinking drivers, Accident causes, Injuries

HS-004 944 Fld. 3/1,3/4,1/3

ALCOHOLISM, MENTAL ILLNESS, AND STRESS IN 96 DRIVERS CAUSING FATAL ACCIDENTS  
by Melvin L. Selzer

Published in Behavioral Science v14 p1-10 (Jan 1969)  
16 refs

96 drivers, each of whom caused a fatal accident, were compared with a like number of control drivers. Information was collected regarding chronic alcoholism, emotional illness, personal and social stress, acute preaccident disturbances, social class, and prior driving behavior.

Search terms: Fatalities, Accident factors, Drinking drivers, Mental illness, Driver behavior, Socio-economic data, Alcoholism, Personality, Blood alcohol levels\*, Age factor in accidents, Time factor in accidents, Suicide\*, Depression\*, Stress (psychology)

HS-004 945 Fld. 3/4,5/4,5/1

A BACKSEAT DRIVERS GUIDE: OR WOMEN'S ROLE AND RESPONSIBILITY IN THE TRAFFIC MORTALITY PROBLEM  
by R. K. Y. Dusingherre

1969 148p  
Published by Magee Publishing Co., Bordertown, N. J.

Discusses the highway safety problem, in particular the role of high-speed turnpikes, speeding trucks, the need

for speed governors, the problems of brakes, drinking, young drivers, speeding ambulances and their accident involvement, law enforcement in traffic cases. Includes discussion of the public's attitudes towards these problems.

Search terms: Highway safety, High speed, Trucks, Law enforcement\*, Ambulances, Brakes (motion arresters), Drinking drivers, Driver intoxication, Traffic courts, Ambulances, Speed control, Adolescent drivers, Young adult drivers, Age factor in accidents, Attitudes, Community support, Toll roads, Accident causes, Sex factor in driving, Speed regulators\*

HS-004 967 Fld. 3/1

BEHAVIOR OF ALCOHOL IN THE BODY. EFFECT OF ALCOHOL ON BEHAVIOR  
by Bernard H. Fox

Published in Traffic Digest and Review v12 n6 p21-4, 33 (Jun 1964) 34 refs

Describes the psychological and pharmacological effects of alcohol on the human system. Includes rate of absorption and elimination, means of estimating blood alcohol percentage, effects on reaction time and driving ability, and effects on intellectual and sensory processes. Laboratory findings must be supplemented by on-the-road findings.

Search terms: Reaction time, Driving drivers, Alcoholic beverages, Psychological factors, Blood alcohol levels\*, Physiology, Laboratory tests, Road tests, Driver skills, Driver intoxication

HS-004 968 Fld. 3/4,3/1,3/7

THE AVERAGE MAN--AND THE NON-AVERAGE DRIVER!  
by Ben Berkey

Published in California Highway Patrolman v32 n11 p7, 16, 32, 36 (Jan 1969)

Attributes the highway safety problem to reckless drivers, who violate traffic laws, drive irrationally, drive while drunk or drugged, and use cars to gain a feeling of power.

Search terms: Reckless driving, Careless driving, Drinking drivers, Drugs, Psychological factors, Driver behavior, Driver physical fitness, Traffic laws, Highway safety, Wrong way\*

HS-005 023 Fld. 3/1,1/3

RESPONSIBILITY, BLOOD ALCOHOL LEVELS, AND ALCOHOLISM  
by Reginald G. Smart, Wolfgang Schmidt

Published in Traffic Safety Research Review v11 n4 p112-6 (Dec 1967) 23 refs  
Presented at the Prevention of Highway Injury symposium April 1967 (cf. HS-004 506)

The blood alcohol levels of alcoholics in accidents, their responsibility for their accidents, and the characteristics of their accidents, are compared with other drivers in alcohol-related accidents. On the average, the alcoholic drivers had blood alcohol levels twice as high as the nonalcoholic drinker.

Search terms: Blood alcohol levels\*, Alcoholism, Drinking drivers, Driver behavior, Accidents

HS-005 068 Fld. 3/1

THE SHOCKING FACTS ABOUT DRINKING AND DRIVING

by William Haddon, Jr.

Insurance Inst. for Highway Safety, Washington, D.C.

Published in Popular Science v194 n5 p78-81, 212-3 (May 1969)

Acceptable ways to identify the drunken driver and remove him from the highways until cured could save 25,000 lives each year. The physiological effect of alcohol on driving, alcohol screening tests, legal limits are topics discussed. A blood alcohol

### 3/1 Alcohol (Cont.)

HS-005-068 (Cont.)

level rating scale is included.

Search terms: Blood alcohol levels\*, Alcoholism, Drinking drivers, Accident causes, Driver intoxication, Driver license laws, Implied consent laws\*, Highway safety, State laws

HS-800 109 Fld. 3/1

#### ALCOHOL SAFETY. FINAL REPORT. VOL. 1

by Ellen Buchalter Rand, Cheryl Clark, Margaret Clay, Lyle Filkins, Jane Lowenstein, Rudolf G. Mortimer, Melvin Selzer

Michigan Univ., Ann Arbor. Highway Safety Research Inst.

1 Feb 1969 263p 92 refs

Contract FH-11-6555

Report no. PB-183 803

The over-involvement of drinking drivers and drinking pedestrians in the population of crash-involved persons has been corroborated. This report summarizes research to extend knowledge of this complex situation. Volume 1 (of 2) presents characterizations of drinking drivers from three populations: (1) traffic fatalities (alcohol involvement); (2) known alcoholics; (3) arrested drinking drivers.

Search terms: Alcoholism, Drinking drivers, Fatalities, Michigan\*. Personality, Pedestrian intoxication, State of the Art studies, Convictions, Blood alcohol levels\*, Statistical analysis, Questionnaires\*. Accident data, Driver records, Driver intoxication, Psychological tests, Socioeconomic data

AVAILABILITY: CFSTI as PB-183 803

HS-005 160 Fld. 3/1; 4/1

#### IMPLIED CONSENT LAW: PHYSICIANS WARNED OF POSSIBLE CONSEQUENCES OF WITHDRAWING BLOOD FOR DRUNK DRIVING TEST

Anonymous

Ohio State Medical Journal v64 p605-8 (May 1968)

Before withdrawing blood, the physician must be satisfied that the person has given his consent and understands the consequences. In Ohio, physicians have no immunity from civil liability for the withdrawal of blood. Suggests that the Ohio law be amended to provide this immunity and to prevent blood testing of persons taking anticoagulants or afflicted with hemophilia. Text of pertinent provisions of the law is quoted.

Search terms: Drinking drivers; Implied consent laws\*; Physicians\*; Blood alcohol levels\*; Legal responsibility\*; Hemophilia\*; Anticoagulants\*; Ohio\*

HS-005 161 Fld. 3/1

#### THE DRINKING DRIVER ON THE INTERNATIONAL SCENE

by Donald C. Lhotka

Published in *Traffic Digest and Review* v12 n5 p26-8, 35 (May 1964)

Published also in the *Municipal Court Review*, Fall 1963.

Outlines penalties and police procedures for dealing with drunk drivers in Great Britain, Sweden, and various other European countries. There is a wide variation in ways of dealing with this problem. Underdeveloped countries in Asia are just beginning to develop major problems connected with the auto. It is suggested that scientifically secured evidence of drunk driving should be obtained, that the offense should be clearly defined, and that effective legislation should be passed to control drunk drivers.

Search terms: Drinking drivers; Driver intoxication; Police\*; Great Britain\*; Sweden\*; Europe\*; Asia\*; Evidence\*; Legislation; Penalties

HS-005 162 Fld. 3/1; 4/1

#### 0.15 PER CENT ACCESSORIES

by George A. Stephens

Published in *Traffic Digest and Review* v12 n6 p10-1 (Jun 1964)

Suggests that states and cities using a blood alcohol level of 0.15% as the standard for drunk driving have made a serious error, and that 0.05% should be the figure. Calls for a campaign of public demonstrations,

good courtroom presentations, and in-service training for police, and changes in legislation to lower the figure to 0.05%. Discusses conditions in North Carolina, which has changed the blood alcohol percentage to 0.10%.

Search terms: Blood alcohol levels\*, Drinking drivers; Driver intoxication; Safety campaigns; Police; Legislation; North Carolina\*; Courts; Law enforcement\*

HS-005 163 Fld. 3/1

#### MEDICAL-LEGAL INQUIRES: THE BREATHALYZER

by I. D. Maxwell

Published in *Nova Scotia Medical Bulletin* v46 p95 (May 1967)

Considers the legality of Canadian provincial statutes requiring breath analysis for drinking drivers. The question of self incrimination is discussed.

Search terms: Canada\*; Breath analysis\*; Driver intoxication; Legal rights; Law (jurisprudence); Drinking drivers

HS-005 164 Fld. 3/1; 4/1

#### LANDMARK COURT DECISION ON RELIABILITY OF BREATH TESTS

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v12 n6 p8-9, 27 (Jun 1964)

Discusses a case in which the New Jersey Supreme Court upheld a conviction for drunk driving based entirely on a blood alcohol test without other proof of erratic driving. Decision of the court on the reliability of such tests is excerpted. Various testing devices for breath and blood analysis are acceptable as evidence.

Search terms: Blood alcohol levels\*; Drinking drivers; Driver intoxication; Legal factors; Courts; Evidence\*; Blood analysis\*; Breath analysis\*; New Jersey\*; Test equipment

HS-005 165 Fld. 3/1

#### THE ROLE OF THE DRINKING

### 3/1 Alcohol (Cont.)

HS-005-165 (Cont.)

#### DRIVER IN TRAFFIC ACCIDENTS: A SUMMARY

by Robert F. Borkenstein, Richard F. Crowther

Indiana Univ., Bloomington, Dept. of Police. Administration

Published in *Traffic Digest and Review* v12 n6 p4-7, 29 (Jun 1964)

Based on a report with the same title, by the above authors and others (HS-001 872).

Nearly 13,000 drivers were stopped for interviews, some at accident sites and others at control sites. The accident and non-accident groups were compared for blood alcohol level and eight other factors. This analysis showed that accident involvement increased rapidly as alcohol level rose. Many factors other than alcohol were related to accident involvement, such as age, inexperience in driving, and educational level.

Search terms: Accident location; Accident causes; Blood alcohol levels\*; Age factor in accidents; Driver characteristics; Alcoholic beverages; Driver skills; Education; Sociological aspects

HS-005 166 Fld. 3/1

#### ALCOHOLISM...DRUNK DRIVING ...AND FATAL AUTOMOBILE ACCIDENTS

by Melvin L. Selzer

Published in *Traffic Digest and Review* v12 p12-4, 31-3 (Jun 1964) 15refs

There is growing evidence that drivers involved in alcohol-related violations and accidents are alcoholics, not casual drinkers. The personality patterns of alcoholic drivers and the relationship of fatal accidents and alcoholism are discussed. Three case histories of alcoholics killed in auto accidents are given. The utility of present laws to keep alcoholics from driving is discussed.

Search terms: Alcoholism; Drinking drivers; Driver intoxication; Psychological factors; Fatalities; Accident factors; Traffic violations; Legislation; Law enforce-

ment\*; Case reports\*; Personality; Driver characteristics; Automobile accidents

HS-005 167 Fld. 3/1

#### WHATEVER HAPPENED TO IMPLIED CONSENT? A SOUNDING

by Edward H. Hunvald, Jr.; Franklin E. Zimring

Published in *Missouri Law Review* v33 n3 p323-99 (Sum 1968)

Contract FH-11-6687

For contractor's report version of this paper, see HS-800 070.

Discusses the following topics: effects of implied consent laws; degree of police enforcement; consequences of implied consent on the administration of drunk driving controls (revocation, convictions); public response. Better record keeping and the establishment of an accurate index of drunk driving are recommended.

Search terms: Implied consent laws\*; Law enforcement\*; Drinking drivers; Missouri\*; Driver records; Accident data; Convictions; Driver intoxication; Driver license revocation; Breath analysis\*; Blood alcohol levels\*; Evidence\*; Public opinion; Fatalities

HS-005 226 Fld. 3/1

#### ALCOHOL AND HIGHWAY ACCIDENTS—A SUMMARY OF PRESENT KNOWLEDGE

by Ross A. McFarland

Published in *Traffic Digest and Review* v12 n6 p30-2 (Jun 1964) 26 refs

Discusses the measuring of impairment in driving ability in relation to the concentration of alcohol in the blood and tissues, the risks of accident associated with increasing alcohol level, the extent to which alcohol is a causative factor in motor vehicle accidents, especially fatalities, and the influence of different drinking habits in relation to accident involvement. Pathological rather than social drinking appears to be the major factor.

Search terms: Blood alcohol levels\*; Drinking drivers; Driver intoxication; Alcoholic beverages; Accident causes; Motor vehicle acci-

dents; Fatalities; Psychological factors; Driver tests; Accident risks; Driver performance; Alcoholism

HS-005 259 Fld. 1/3; 3/1

#### SINGLE MOTOR VEHICLE ACCI- DENTS IN CUYAHOGA COUNTY (OHIO): 1958-1963

by S. R. Gerber; Paul V. Joliet; John R. Feegele

Published in *Journal of Forensic Sciences* v11 n2 p144-51 (Apr 1966) 18 refs

Presented at the Eighteenth Annual Meeting, American Academy of Forensic Sciences, Chicago, Feb. 24, 1966.

Of the 225 cases examined, 168 deaths were due to accident injury; 57 to natural causes. Of these, 53 indicated significant cardiovascular disease. Three-fifths of those dying of injuries had blood alcohol above 0.10%. Road and weather conditions were also analyzed.

Search terms: Accident causes; Heart diseases\*; Accident factors; Drinking drivers; Blood alcohol levels\*; Fatalities; Single vehicle accidents; Weather; Driving conditions; Driver intoxication

HS-005 278 Fld. 3/1; 3/7

#### EFFECTS OF ALCOHOL IN COM- BINATION WITH DRUGS

by Robert B. Forney; Francis W. Hughes

Published in *Traffic Digest and Review* v12 n5 p22-4 (May 1964) 14 refs

Insufficient attention has been paid to the effects of combining alcohol with drugs, especially tranquilizers. While such drugs diminish anxiety, they also diminish performance. Tests on humans and animals to determine these effects are described. The difficulties of testing impairment of driving ability are discussed.

Search terms: Drinking drivers; Driver skills; Driver physical fitness; Drugs; Tranquilizers\*; Driver intoxication; Alcoholic beverages; Animal experiments\*; Synergism\*

HS-005 279 Fld. 3/1; 1/2

#### HOLIDAY DRINKING AND HIGH-

### 3/1 Alcohol (Cont.)

HS-005-279 (Cont.)

#### WAY FATALITIES

by Julian A. Waller

Published in *Journal of the American Medical Association* v206 n12 p2693-7 (16 Dec 1968) 14 refs

Blood alcohol concentrations, liver conditions, and arrests were studied for 1,251 California fatalities. 58% of the drivers, 47% of the passengers, and 36% of the pedestrians had alcohol in their blood; about two-thirds were associated with fatty livers or previous arrests. No difference was found in Christmas season figures. Most alcohol-associated fatalities throughout the year involve problem drinkers.

Search terms: Blood alcohol levels\*; Liver diseases\*; Driver records; Drinking drivers; Alcoholism; Driver intoxication; Fatalities; Accident analysis; Seasons\*; Drivers; Pedestrians; Passengers

HS-005 280 Fld. 3/1; 3/7

#### THE USE OF ELECTROENCEPHALOGRAPHY TO MEASURE RECOVERY TIME AFTER INTRAVENOUS ANAESTHESIA

by A. Doenicke; J. Kugler; A. Schellenberger; Th. Guertner

Published in *British Journal of Anaesthesia* v38 p580-590 (Aug 1966) 22 refs

Depth of anesthesia and tendency to sleep were tested following the administration of various anesthetics. Results suggest that after intravenous barbiturate anesthesia for out-patient procedures, patients should be cautioned against driving or drinking alcohol for 24 hours. The potentiating effect of a small quantity of alcohol can be discerned even after 12 hours in the case of some anesthetics.

Search terms: Anesthetics\*; Barbiturates\*; Driver physical fitness; Alcoholic beverages; Electroencephalography\*; Synergism\*

HS-005 297 Fld. 5/4; 3/1

#### AUTOMOTIVE SAFETY AT GM

by Paul C. Skeels

General Motors Proving Ground, Milford, Mich.

Published in *Automotive Industries*, v140 n2 p62-6 (15 Jan 1969) 5p

Presented at the American Management Association Seminar, Chicago, Oct. 1968.

Outlines efforts being made in highway safety, accident investigation, and safety features such as sideguard beam, windshield skid header, head restraints to prevent whiplash, front pillar to absorb impact, restraint systems and other design improvements. The use of dummies to determine human tolerances and tests to determine the effects of drinking on driving ability are also discussed. Efforts are intended to produce a more reliable, controllable, crash-worthy car.

Search terms: Highway safety; Motor vehicle design; Restraint systems; Drinking drivers; Driver skills; Accident investigation; Impact tolerance; Impact tests; Dummies; Human body simulation; Windshields; Headrests; Energy absorption; Side impact collisions; Whiplash injuries; Safety design; Side-guard beam\*; Sophisticated Sam\*

HS-005 353 Fld. 3/1; 3/7; 1/3

#### A STUDY: ROLES OF ALCOHOL, DRUGS AND ORGANIC FACTORS IN FATAL SINGLE VEHICLE ACCIDENTS

by Harold W. Sullivan

Published in *Police Chief* v35 n3 p16, 18, 20 22 (Mar 1968)

Report version is available from CFSTI as PB-175-942 (see HS-000 998).

A study was made of 1,474 single vehicle accidents in California; 155 of these deaths were attributed to natural causes and the rest to injuries. For 772 cases a blood alcohol sample could be obtained, and figures are given for sex, age, accident record, and other characteristics of these drivers. The problems of drugs and deaths from natural causes are outlined briefly.

Search terms: Single vehicle accidents; Accident analysis; Fatalities; Blood alcohol level\*; Sex factor in

accidents; Age factor in accidents; Driver records; Drugs; Driver characteristics; California\*; Alcoholic beverages; Fatalities from natural causes\*

HS-005 354 Fld. 3/1

#### WHY DO DRIVERS DRINK?

by James M. Reinhardt

Published in *Traffic Digest and Review* v12 n5 p18-20, 36 (May 1964)

The psychological reasons for increasing use and acceptance of alcohol are examined. It is suggested that we live in an anxiety-producing culture in which people who feel inadequate turn to alcohol for escape and that people are increasingly estranged from the traditionally stabilizing qualities of their culture. People arrested for drunk driving are generally unhappy and lacking in self-confidence. The situation can be expected to get worse, especially among young drivers.

Search terms: Drinking drivers; Driver intoxication; Psychological factors; Public opinion; Sociological aspects; Alcoholic beverages; Young adult drivers\*

HS-005 355 Fld. 3/1

#### ALCOHOL AND SUDDEN DEATH—IMPORTANCE OF TESTING SEVERAL BODY FLUIDS

by Herman A. Heise

Published in *Rocky Mountain Medical Journal* v65 n6 p39-44 (Jun 1968)

Blood alcohol tests alone cannot always determine cause of death. Urinalysis is often more important. Many hours after drinking, alcohol has disappeared from the blood but not the urine or cerebrospinal fluid. Sixteen case reports are given, some involving auto accidents. Tests were necessary to determine whether some victims died of intoxication or carbon monoxide poisoning.

Search terms: Blood alcohol levels\*; Fatalities; Drinking drivers; Intoxication; Carbon monoxide; Automobile accidents; Cerebrospinal fluid\*; Brain\*; Case reports\*; Chemical analysis; Alcoholic beverages; Stomach\*; Urinalysis\*

### 3/1 Alcohol (Cont.)

HS-005 382 Fld. 1/3; 5/6; 3/1; 3/7

#### THE ROLES OF CARBON MON-OXIDE, ALCOHOL, AND DRUGS IN FATAL SINGLE CAR ACCIDENTS (ADVANCE REPORT)

California. Dept of Highway Patrol, Sacramento

Oct 1965 30p 10 refs

Prepared in cooperation with Bureau of Public Roads, Washington, D.C.

Carbon monoxide was found to be a negligible factor. About 12% of the fatalities studied were taking drugs, but the detection process was not complete. Blood alcohol level was .10% or more in 70% of the male and 40% of the female drivers. There was a considerable incidence of arrests for drunkenness and other criminal behavior in the previous records of these subjects. About 10% of the cases were drivers who died from natural causes just before their accidents; these were middle-aged and elderly male drivers. Study was based on 380 subjects.

Search terms: Carbon monoxide; Fatalities; Drugs; Blood alcohol levels\*; Sex factor in accidents; Driver records; Drinking drivers; Driver intoxication; Adult drivers; Aged drivers\*; Accident studies; Single vehicle accidents; Accident factors; Case reports\*; Carboxyhemoglobin\*; Heart diseases\*; Alcoholic beverages; Diabetes mellitus\*; Fatalities from natural causes\*

AVAILABILITY: Corporate author

HS-005 440 Fld. 3/1

#### WHO IS THE DEADLY DRINKING DRIVER?

by Joseph W. Little

Published in *The Journal of Criminal Law, Criminology and Police Science* v59 n4 p619-23 (Dec 1968) 30 refs

The drinking driver is significantly overrepresented in the accident population and that the involvement of alcoholics is great, particularly in

serious accidents. The characteristics of accident-involved nonalcoholic drinkers having serious accidents and the characteristics of, all drinking drivers in less serious accidents are not well known. Satisfactory controls can be made only when these characteristics are well known. Objective tests to identify high-risk drinking drivers during some routine examining procedure are needed.

Search terms: Driver intoxication; Drinking drivers; Blood alcohol levels\*; Accident causes; Accident risks; Fatalities; Alcoholism; Injury factors; Accident severity

HS-005 443 Fld. 3/7; 3/1

#### THE EFFECTS OF MARIJUANA AND ALCOHOL ON SIMULATED DRIVING PERFORMANCE

by Alfred Crancer, Jr.; James M. Dille; Jack C. Delay; Jean E. Wallace; Martin D. Haykin

Washington. Dept. of Motor Vehicles, Olympia; Washington Univ., Seattle

Published in *Science* v164 n3881 p851-4 (16 May 1969)

Apr 1969 14p 10 refs  
Report no. 021

Study was conducted to determine effect of a "normal social marijuana high" on simulated driving performance. Experienced marijuana smokers accumulated significantly more speedometer errors on the simulator while the same subjects intoxicated from alcohol accumulated more accelerator, brake, signal, speedometer, and total errors but not steering errors. Impairment in simulated driving performance is not a function of increased marijuana dosage.

Search terms: Drugs; Drug addiction; Marijuana\*; Drinking drivers; Driver intoxication; Driving simulation; Driver performance; Automobile simulators; Speed patterns; Braking; Steering (driving); Acceleration patterns; Alcoholic beverages

AVAILABILITY: Washington Dept. of Motor Vehicles, Olympia, or journal

HS-005 493 Fld. 3/1

#### A SURVEY OF POST-MORTEM BLOOD-ALCOHOLS FROM 41 CALIFORNIA COUNTIES IN 1966

by Royal A. Neilson

California Traffic Safety Foundation, San Francisco

Jul 1967 18p

Cover title: Alcohol Involvement in Fatal Motor Vehicle Accidents in 41 California Counties in 1966. Prepared in cooperation with California State Coroners Assoc.

Prepared in cooperation with California State Coroners Assoc.

Alcohol involvement of 1,953 pedestrians and adult drivers who died within six hours of their accidents is described. Statistics showed that: 53% of the drivers had been drinking prior to their accidents; pedestrians between ages of 15-64 were found to have been drinking more often than those aged 65 or older; 82% of the drivers and 86% of the pedestrians had blood-alcohol ratios of 0.10% or higher. Also included is a comparison of eight large counties covering a five-year period which failed to show any significant trends in alcohol involvement in fatal accidents.

Search terms: Fatalities; Drinking drivers; Pedestrian intoxication; California\*; Accident risks; Age factor in accidents; Accident data; Accident factors; Driver intoxication; Pedestrian accidents; Blood alcohol levels\*; Accident analysis; Alcoholic beverages

AVAILABILITY: Corporate author

HS-005 632 Fld. 3/1

#### VALIDITY OF IMPLIED CONSENT TYPE OF LAW

By Robert L. Donigan

Published in *Traffic Digest and Review* v12 n5 p13-6, 32-3 (May 1964)

Discusses the present use of chemical test programs for drunk driver detection by police departments and the cooperation of courts in accepting such test evidence. Suggests careful evaluation of needs for implied consent legislation. Recommends that

### 3/1 Alcohol (Cont.)

#### HS-005-632 (Cont.)

such legislation should conform to the Uniform Vehicle Code.

Search terms: Blood analysis\*; Implied consent laws\*; Blood alcohol levels\*; Police; Courts; Evidence\*; Uniform Vehicle Code\*; Drinking drivers; Driver intoxication

#### HS-005 633 Fld. 3/1; 3/5

#### DOES ALCOHOL EDUCATION BELONG IN A DRIVER EDUCATION PROGRAM?

by S. A. Abercrombie

Published in *Traffic Digest and Review* v12 n5 p6-10, 34-5 (May 1964)

High school students should be taught about alcohol in relation to driving. The practices of various states are surveyed, and the courses outlined. It is suggested that the older approach emphasizing the evils of alcoholism is ineffective with high school students and that a modern approach explaining how alcohol affects the human system is preferable. Guidelines for driver education teachers are given.

Search terms: High school drivers; Driver education; Alcoholism; Alcoholic beverages; Physiological effects\*; High school driving courses\*

#### HS-005 634 Fld. 3/1

#### ALCOHOL AND ROAD ACCIDENTS

by J. D. J. Harvard

Published in *Journal of Forensic Medicine* v12: n1 p45-8 (Jan-Mar 1965)

Discusses the role of alcohol as a cause of accidents, and whether its role is overemphasized. Discusses the validity of blood tests for suspected drunk drivers as an accident reducing device.

Search terms: Blood alcohol levels\*; Drinking drivers; Driver intoxication; Accident causes; Accident prevention; Blood analysis\*

#### HS-005 635 Fld. 3/1

#### IDENTIFY DRUNK DRIVER AS TOP HIGHWAY THREAT

Anonymous

Published in *Chicago Traffic Safety Review* (Nov-Dec 1968)

Outlines the role of drunk drivers in accidents, reporting percentages from various studies on their involvement. A chart of blood alcohol levels related to body weight is given. The effects of alcohol on driver performance are discussed.

Search terms: Drinking drivers; Accident causes; Blood alcohol levels\*; Driver performance; Intoxication; Weight (mass); Alcoholic beverages; Adolescent drivers

#### HS-005 647 Fld. 3/6; 3/1

#### REVOCATION AND SUSPENSION OF DRIVERS' LICENSES

by Louis R. Morony

Published in *Traffic Digest and Review* v12 n6 p16-9, 34-6 (Jun 1964)

There is little unanimity among the states in the disciplinary actions taken against drinking drivers. This paper outlines the length of revocation periods, the issuing of restricted licenses, appeal procedures, the National Driver Register, driver license compacts between states, the procedures for punishing those who drive on revoked licenses, and the difficulties in chemical tests used to determine blood alcohol levels.

Search terms: Legal factors; Blood alcohol levels\*; Blood analysis\*; Drinking drivers; Driver intoxication; Driver restrictions; Driver license revocation; State government; National Driver Register\*; Driver license standards; Penalties

#### HS-005 678 Fld. 3/1

#### ALCOHOLICS AND ACCIDENTS

by Ronald G. Shafer

Published in *Science Digest* v64 n5 p38-42 (Nov 1968)

Alcoholics cause more than half of all traffic deaths. Recent research

indicates that most damage is caused by the excessive drinker, or alcoholic and not by the social drinker driving after one or two drinks. The author relates his experience with a road test performed at varying blood alcohol levels. He concluded that impairment set in at a blood alcohol level of 0.04% and that drunk driving laws in the U.S. are lenient.

Search terms: Blood alcohol levels\*; Alcoholism; Drinking drivers; Road tests; Fatalities; Driver intoxication

#### HS-005 679 Fld. 3/1

#### THE DRINKING DRIVER AND THE MOVIES!

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v14 n5 p19-22 (May 1966) 22 refs

Many police departments routinely use moving pictures of persons arrested for driving under the influence of intoxicating liquor. But few cases have reached the appellate courts involving (1) the legality of evidence of inebriety gained through observation of these motorists performing certain physical tests, and (2) motion pictures recording their actions. One case admitting motion pictures as evidence and one case ruling motion pictures inadmissible are discussed. In another case voice recordings were held admissible evidence.

Search terms: Drinking drivers; Evidence\*; Motion pictures\*; Tape recordings\*; Police traffic services; Courts; Driver intoxication; Legal rights; Self incrimination\*

#### HS-005 680 Fld. 3/1

#### TRAFFIC DEATHS GO UP AGAIN. ROLE OF THE ALCOHOLIC DRIVER. OUR PRESENT CONTROL METHODS

by H. Emerson Campbell

Published in *JAG Journal* v22 n3 p61-14, 71 (Dec 1967-Jan 1968) 26 refs

Author cites statistics, reviews current medical and legal thought, and concludes that present restrictions on the

### 3/1 Alcohol (Cont.)

#### HS-005-680 (Cont.)

drinking motorist are inadequate. Blood alcohol levels are discussed, and the severe standard of 0.05% in Norway contrasted with more lenient standards in other countries.

Search terms: Blood alcohol levels\*; Norway\*; Breath analysis\*; Traffic laws; Alcoholism; Drinking drivers; Fatalities; Traffic law enforcement; Driver intoxication

#### HS-005 681 Fld. 3/1; 4/1

#### THE DRINKING DRIVER: AN APPROACH TO SOLVING A PROBLEM OF UNDERESTIMATED SEVERITY

by David A. Scholl

Published in *Villanova Law Review* v14 n1 p97-115 (Fall 1968) 147 refs

Improvement of the statutes prohibiting driving while intoxicated is recommended. Adoption of implied consent laws is a necessity. Reducing the alcohol level above which a driver is presumed to be intoxicated and providing stricter, more consistent penalties also are necessary for more appropriate statutes. That police institute periodic road blocks is suggested. Henry Ford's foresight regarding the dire effects of removing prohibition in the wake of increase in auto ownership is mentioned. American and European laws and their enforcement are contrasted.

Search terms: Implied consent laws\*; Driver intoxication; Blood alcohol levels\*; Legislation; Prohibition\*; Drinking drivers; Breath analysis\*; Urinalysis\*; United States\*; Europe\*; Alcoholism; Reviews\*; Constitutional law\*; Law enforcement\*

#### HS-005 682 Fld. 3/1; 4/1

#### DRIVING WHILE INTOXICATED—IMPLIED CONSENT STATUTE IN OHIO

by Terence J. Clark

Published in *Case Western Reserve Law Review* v20 n1 p277-95 (Nov 1968) 68 refs

Under Ohio's implied consent statute,

a driver who refuses a chemical test for intoxication may have his driver's license revoked. If a blood alcohol level of 0.15% or more is determined, the driver is subject to criminal penalty. Constitutional questions and reasonable grounds for arrest are discussed.

Search terms: Ohio\*; Implied consent laws\*; Blood alcohol levels\*; Driver license revocation; Self incrimination\*; Drinking drivers; Driver intoxication; Reviews\*; Blood analysis\*; Constitutional law\*; Chemical analysis; Law enforcement\*

#### HS-005 683 Fld. 3/1; 1/3

#### ALCOHOL INVOLVEMENT IN FATAL MOTOR VEHICLE ACCIDENTS

by E. O. F. Campbell

Published in *Modern Medicine of Canada* v24 n4 p35-42 (Apr 1969) 8 refs

Results of measurement of blood alcohol levels in a study of motor vehicle fatalities included the following: among all tested drivers considered responsible for their accidents, 61.3% had been drinking and 51.1% had blood alcohol levels of 0.10% or more; pedestrians killed in traffic accidents appear to have been drinking in 53.9% of those who were tested. 1,163 dead drivers were examined for blood alcohol, and 281 pedestrian deaths were documented.

Search terms: Blood alcohol levels\*; Drinking drivers; Pedestrian intoxication; Fatalities; Accident causes; Accident data; Driver intoxication; Canada\*

#### HS-005 684 Fld. 3/1

#### ALCOHOL AND THE MOTORIST: PRACTICAL AND LEGAL PROBLEMS OF CHEMICAL TESTING

by M. C. Slough; Paul E. Wilson

Published in *Minnesota Law Review* v44 p673-705 (1960) 115 refs

Two basic problems inherent in chemical testing are analyzed; the limitations on the accuracy of the tests, and the possible invasions on

constitutional and statutory rights of individuals resulting from compelled submission to the tests. Also examined are the constitutionality and feasibility of the so-called implied consent statutes recently enacted in some states to overcome constitutional barriers proscribing the use of chemical testing for intoxication.

Search terms: Implied consent laws\*; Drinking drivers; Blood alcohol levels\*; Driver intoxication; Courts; Breath analysis\*; Blood analysis\*; Legal rights; Supreme court\*; Legal factors; Self incrimination\*

#### HS-005 685 Fld. 3/1

#### ALCOHOL AND DRIVING: THE BREATHALYSER BOGEY

by Kenneth G. Jamieson

Published in *Medical Journal of Australia* v2 n10 p425-34 (7 Sep 1968)

Queensland has recently joined Victoria, Tasmania, South Australia and Western Australia in introducing breathalyzer legislation. The new Queensland act is briefly discussed. Blood alcohol levels and their relation to driving skills are discussed. Analysis is given of the age group and occupational status of drivers charged under the act.

Search terms: Alcoholic beverages; Driving skills; Breath analysis\*; Drinking drivers; Australia\*; Age factors; Blood alcohol levels\*; Sociological aspects

#### HS-005 686 Fld. 3/1; 1/3

#### THE ROLE OF ALCOHOL IN FATAL COLLISIONS WITH TRAINS

by Julian A. Waller

Published in *Northwest Medicine* v67 n9 p852-6 (Sep 1968)

A study was made of 94 persons killed in collisions with trains in California. Thirty per cent of drivers, 55 per cent of passengers, and 64 per cent of pedestrians age 15 or older who survived 6 hours or less had been drinking. Most of those injured at night had been drinking, frequently with very high alcohol

### 3/1 Alcohol (Cont.)

#### HS-005-686 (Cont.)

concentrations and histories of previous arrests for misuse of alcohol. Gates are recommended for all such intersections.

Search terms: Age factor in accidents; Drinking drivers; Alcoholic beverages; Passengers; Railroad grade crossings\*; Fatalities; Collisions (accidents); Injury factors; Driver intoxication; Blood alcohol levels\*; Pedestrian intoxication; Barriers; Pedestrian accidents; Alcoholism; California\*

#### HS-005 687 Fld. 3/1

##### THE CHRONIC ALCOHOLIC AS A MOTOR VEHICLE OPERATOR

by Alfred Crancer, Jr.; Dennis L. Quiring

Published in *Northwest Medicine* v68 p42-7 (Jan 1969)

Summarizes the driving experience of a group of chronic alcoholics in Washington and compares them with a control population group. Chronic alcoholics had a larger proportion of violations for drunk and negligent driving but fewer violations for speeding and failure to yield. The proportion of injury accidents was greater, but none of the chronic alcoholic group had been involved in a fatal accident.

Search terms: Alcoholism; Drinking drivers; Accident rates; Fatalities; Driver licensing; Traffic violations; Careless driving; High speed; Injury factors; Washington\*

#### HS-005 688 Fld. 3/1; 3/12

##### A DEMONSTRATION OF THE EFFECTS OF ALCOHOL ON VISION

by Charles R. Stewart

Published in *Journal of the American Optometric Association* v35 n4 p289-90 (Apr 1964)

Describes an experiment which indicated that persons with blood alcohol concentrations less than 0.15% will experience vision problems sufficient to contribute to the auto accident problem. Depth perception, peripheral vision, and reaction time were affected.

Search terms: Blood alcohol levels; Driver intoxication; Drinking drivers; Laboratory tests; Peripheral vision; Reaction time; Depth perception; Alcoholic beverages

#### HS-005 751 Fld. 3/1

##### TESTIMONY IN A DRIVING UNDER THE INFLUENCE CASE

by Frank S. Spies

Published in *Law and Order* v17 n5 p102-5 (May 1969)

Policemen who have to testify in drunk driving cases should have a good recollection of the events, for which detailed notes are indispensable; a basic knowledge of the rules of evidence; and the ability to express themselves well. Matters on which they should and should not attempt to offer expert testimony are outlined, as are defendants' legal rights and most frequently used defenses.

Search terms: Police; Drinking drivers; Driver intoxication; Evidence\*; Legal rights; Courts

#### HS-005 752 Fld. 3/1

##### ALLSTATE ADS AIM TO GET DRUNK DRIVERS OFF THE ROAD

by Don Costa

Published in *Traffic Safety* v69 n7 p22-3, 36 (Jul 1969)

A massive advertising campaign is being conducted by the Allstate Insurance Companies to get the drunk driver off the road. Allstate views its objective as the speed-up, adoption and implementation of all 16 Highway Safety Act standards in each state, and is emphasizing the need for stronger drunk driving laws.

Search terms: Advertising; Driver intoxication; Safety standards; Safety campaigns; Highway safety; Alcoholism; Insurance industry\*; Highway Safety Act of 1966\*; Drinking Drivers; Safety propaganda

#### HS-005 791 Fld. 3/1

##### WANTED FOR MURDER: JOHN BARLEYCORN

Anonymous

Published in *Journal of Insurance Information* v30 n1 p39-46 (Jan-Feb 1969)

Reviews the Department of Transportation's August, 1968, report to Congress, entitled "Alcohol and Highway Safety." (HS-001 135) Statistics on driver and pedestrian fatalities and single vehicle crashes involving alcohol as well as information regarding blood alcohol levels are extracted from the report.

Search terms: Alcoholic beverages; Drinking drivers; Driver intoxication; Pedestrian intoxication; Fatalities; Single vehicle accidents; Blood alcohol levels\*; Department of Transportation\*; Accident causes; Alcoholism; Accident data

#### HS-005 792 Fld. 3/1; 3/7

##### POLICE LAUNCH CAMPAIGN AGAINST DRINKING DRIVERS

Anonymous

Published in *Law and Order* v17 n6 p48-50, 52, 55-6 (Jun 1969)

The New York Traffic Council is conducting a campaign to combat the problem presented by drivers under the influence of drugs especially alcohol. Eight regional two-day seminars are part of the program. The governor and police officials are urging the legislators to pass stiffer laws against drinking drivers. Present New York law is explained. Other drugs are discussed briefly as well.

Search terms: New York\*; Drugs; Alcoholic beverages; Drinking drivers; Driver intoxication; Intoxication; Blood alcohol levels\*; Chemical analysis; Legislation; Law enforcement\*; Police

### 3/1 Alcohol (Cont.)

HS-005 793 Fld. 3/1; 3/7

#### COMPARISON OF THE EFFECTS OF MARIHUANA AND ALCOHOL ON SIMULATED DRIVING PERFORMANCE

by Alfred Crancer, Jr.; James M. Dille; Jack C. Delay; Jean E. Wallace; Martin D. Haykin

Published in *Science* v164 n3881 p851-4 (16 May 1969) 8 refs

The effects of marihuana, alcohol, and no treatment on simulated driving performance were determined for experienced marihuana smokers. Subjects experiencing a "marihuana high" accumulated more speedometer errors but no significant differences in accelerator, brake, signal, steering, and total errors than when under control conditions. The same subjects intoxicated from alcohol accumulated significantly more accelerator, brake, signal, speedometer, and total errors but no significant difference in steering errors than when under normal conditions.

Search terms: Marijuana\*; Alcoholic beverages; Driver intoxication; Driving simulation; Driver performance; Intoxication; Steering (driving); Braking; Speed patterns; Signals; Acceleration patterns

HS-005 794 Fld. 3/1

#### ALCOHOL AND INJURY: HOW SHALL WE HANDLE SOCIETY'S CHILD

by Julian A. Waller

Published in *Safety* v5 n3 p28-30 (May-Jun 1969)

This author emphasizes the difference between social and deviant drinking and attributes the bulk of injuries involving alcohol to those who abuse its use. Prohibition and revocation of drivers' licenses were deemed of limited effectiveness. Barmack and Payne's project at Lackland Air Force Base was cited. In this study, the labelling of drunken driving as sick behavior was found to be highly suc-

cessful in reducing crashes.

Search terms: Drinking drivers; Driver intoxication; Pedestrian intoxication; Injuries; Fatalities; Mental illness; Driver license revocation; Prohibition\*; Alcoholism; Safety propaganda; Social drinking\*

HS-005 795 Fld. 3/1

#### ALCOHOL, TRAFFIC SAFETY AND THE MOEBIUS STRIP

by Ira H. Cisin

George Washington Univ., Washington, D.C.

25 Oct 1967 8p

(Presented at the National Safety Congress)

This speech compares the drinking driver problem to the Moebius strip, an endless band of paper. It is suggested that rational appeals to prevent driving after drinking have failed because people are willing to engage in risk-taking behavior. Punishment is discussed as the conventional deterrent for drunk driving and other anti-social behavior, and it is suggested that punishment is ineffective. Other means of modifying human behavior need to be found to deal with the drunk driving problem successfully.

Search terms: Alcoholism; Drinking drivers; Traffic safety; Driver behavior; Driver intoxication; Psychological factors; Human behavior; Rational appeals; Risk taking\*

HS-005 796 Fld. 3/3; 3/1; 1/3

#### FATAL MOTORCYCLE ACCIDENTS

by J. Wallace Graham

Published in *Journal of Forensic Sciences* v14 n1 p79-86 (Jan 1969) 10 refs

This paper deals with the age, sex, and distribution of injuries in 352 motorcycle operator and/or passenger fatalities which occurred in Los Angeles County, California, from 1962 to 1966. The type of accident (collision or noncollision) and the extent of responsibility of the motorcycle operator is also noted. In addition an evaluation is made of the extent to which motorcycle operators having significant blood alcohol con-

centrations are responsible for accidents.

Search terms: Los Angeles County\*; Motorcycle accidents; Fatalities; Blood alcohol levels\*; Age factor in accidents; Sex factor in accidents; Accident rates; Passengers; Accident responsibility; Single vehicle accidents; Collisions (accidents); Driver intoxication; Head injuries; Spinal injuries; Arm injuries; Abdomen injuries; Leg injuries; Drinking drivers

HS-005 808 Fld. 3/9; 1/3; 3/1

#### MEDICAL IMPAIRMENT AND HIGHWAY CRASHES

by Julian A. Waller

Published in *Journal of the American Medical Association* v208 n12 p2293-6 (23 Jun 1969) 22 refs.

Presented to American Medical Association Automotive Safety Symposium, Washington, D. C., Sept. 13, 1968.

Impairment to drivers or pedestrians from chronic medical problems may be a contributing factor in 15 to 25% of crashes. In addition, alcoholism is a factor in a third of fatal crashes. Drivers with medical problems should be reported to licensing authorities, but no more than a quarter of these drivers should have their licenses revoked. For the remainder, driving and walking tasks should be simplified. Energy absorption capacity of vehicles and highways should be improved and emergency health services upgraded.

Search terms: Alcoholism; Drinking drivers; Driver intoxication; Energy absorption; Driver physical fitness; Pedestrian characteristics; Driver license revocation; Driving tasks; Walking\*; Accident factors; Handicapped drivers; Medical conditions; Fatalities; Emergency medical services; Physicians.

HS-005 837 Fld. 3/4; 1/3; 3/1

#### AUTOMOBILE ACCIDENTS, SUICIDE AND UNCONSCIOUS MOTIVATION

by Melvin L. Selzer; Charles E. Payne  
Published in *American Journal of*

### 3/1 Alcohol (Cont.)

#### HS-005-837 (Cont.)

*Psychiatry* v119 n3 p237-40 (Sep 1962) 15 refs

This investigation using 60 male psychiatric patients points toward the possibility that unconscious self-destructive impulses, sometimes abetted by alcohol, are a major although covert factor in the etiology of certain automobile accidents.

Search terms: Mental illness; Suicide\*; Alcoholism; Accident causes; Psychological factors; Accident rates

#### HS-005 899 Fld. 3/1

##### BREATHALYZER TRAINING MANUAL

by W. L. K. Preston, ed.

Victoria. Police Force, Melbourne. Norman McCallum Police Forensic Science Lab. (Australia)

1968 117p

2nd Edition

This course is designed for the police officer who is expected to operate the Breathalyzer in the field. Subjects included involve elementary physiology, pathology, and pharmacology as related to alcohol in body fluids and in the breath. Guidelines for using the tests as evidence are given.

Search terms: Drinking drivers; Australia\*; Breath analysis\*; Blood alcohol levels\*; Police; Physiology; Alcoholic beverages; Human body; Blood analysis\*; Driver intoxication; Forensic medicine; Pathology; Chemical analysis; Evidence\*

AVAILABILITY: Corporate author

#### HS-005 900 Fld. 3/1; 4/1

##### ALCOHOL AND THE IMPAIRED DRIVER: A MANUAL ON THE MEDICOLEGAL ASPECTS OF CHEMICAL TESTS FOR INTOXICATION

by Russell S. Fisher; Charles H. Hine; C. Joseph Stetler; John K. Torrens; Carl E. E. Wasmuth, Herman Wing; Richard P. Bergen

American Medical Assoc., Chicago, Ill.

243p 229 refs

A Model Program for the Control of Alcohol for Traffic Safety developed by the National Safety Council for the National Highway Safety Bureau is appended.

The impairment of a driver by alcohol is discussed in terms of pharmacology and neuropsychology. Road tests and simulated driving tests have led to the conclusion that driving skill deteriorates with a relatively low blood alcohol level, certainly less than 0.05%. Chemical test methods, and their legal aspects are presented. Committee members preparing this report included attorneys as well as physicians.

Search terms: Traffic safety programs; Alcoholic beverages; Drinking drivers; Handicapped drivers; Blood alcohol levels\*; Pharmacology\*; Synergism\*; Drugs\*; Nervous system; Human behavior; Driver intoxication; Driving simulation; Court decisions\*; Driver performance tests; Road tests; Chemical analysis; Urinalysis\*; Breath analysis; Legislation; Driver license laws; Legal factors; Evidence\*; Uniform Vehicle Code\*; Constitutional law\*; Self incrimination\*; Implied consent laws\*; Federal-state relationships\*; Multidiscipline teams\*

AVAILABILITY: Corporate author

#### HS-005 926 Fld. 5/0; 3/1

##### THE DRINKING DRIVER PROBLEM

by David R. McLellan; Charles J. Brady

General Motors Proving Ground, Milford, Mich.

10p 6 refs

Two driving tests were designed to evaluate some of the effects of alcohol on driving skills. One was an evasive maneuver simulating an emergency and the other a cone course which forced drivers to follow a winding path. Seven volunteers took the tests, and their driving became erratic and uncoordinated as blood alcohol level rose.

Search terms: Blood alcohol levels\*; Driver intoxication; Drinking drivers; Driver performance studies; Driver tests; Driver skills; Alcoholic beverages

AVAILABILITY: Paper 23 in its PROC. OF AUTOMOTIVE SAFETY SEMINAR, 11-12 Jul 1968 (HS-005 901)

#### HS-005 961 Fld. 3/1; 3/6

##### MARYLAND FIRST STATE WITH 'EXPRESS CONSENT'

by Spencer McAllister

Published in *Analogy* p16-9 (Autumn 1969)

Approved legislation requires Maryland drivers to sign an affidavit consenting to a chemical test for alcohol before receiving a license. Differences between express consent and implied consent are pointed out.

Search terms: Maryland\*; Drinking drivers; Community support; Express consent laws\*; Implied consent laws\*; Driver license laws; Chemical analysis

#### HS-005 962 Fld. 3/1; 1/3

##### THE ROLE OF ALCOHOL IN FATAL TRAFFIC "ACCIDENTS"

by Horace E. Campbell

Published in *Traffic Safety* v65 n3 p24-6, 36-7

Combined data is presented proving that the drinking driver is the largest part of our traffic death and serious injury problem. Discusses legislation concerning drinking and driving in Norway and Sweden. Suggests that: implied consent legislation be adopted by every state along with special legislation providing medical or psychiatric treatment for the problem drinker; since blood alcohol levels of 0.05 per cent produce impaired driving behavior, the statutory level should be below this point; and the problem should be recognized more fully and handled in a rational manner.

Search terms: Drinking drivers; Fatalities; Norway\*; Sweden\*; Legislation; Blood alcohol levels\*; Accident causes; Injuries; Injury prevention; Injury severity; Accident data; Driver intoxication; Traffic accidents; Problem drivers

### 3/1 Alcohol (Cont.)

HS-005 963 Fld. 3/1

#### WHY WE'RE MISSING THE BOAT ON ALCOHOL EDUCATION

by Julian A. Waller

Published in *Traffic Safety* v69 n2 p24-5, 36 (Feb 1969)

Educational programs about alcohol and safety will succeed only if they are based upon a recognition that there are several goals and several audiences, each of which must be approached differently, and only if such programs are carefully evaluated and redesigned as necessary, using appropriate scientific techniques that are available but all too often ignored. While the connection between alcohol and accidents has long been known, educational programs have had little effect.

Search terms: Safety programs; Drinking drivers; Pedestrian intoxication; Sociological aspects; Accident prevention; Driver intoxication; Safety propaganda; Alcoholic beverages; Accident causes; Driver education

HS-005 964 Fld. 3/1

#### THE TRIAL OF A "DRUNK-DRIVING" CASE

by Charles Holloper

Published in *Trial Lawyers Guide* v8 p407-18 (1964)

Published originally in *Practical Lawyer*, v3 n8 (Dec 1957).

The trial of the drunken driving case is a criminal proceeding. Important points for the defense attorney include: selecting the jury, police witnesses, chemical tests, blood tests, breath tests. Inadequacies of breath testing devices, errors in administration of tests are reviewed also. Drunk driving defendants have the same constitutional rights as do all other accused persons.

Search terms: Drinking drivers; Courts; Legal rights; Driver intoxication; Police; Blood analysis\*; Breath analysis\*; Blood alcohol levels\*; Evidence\*

HS-005 965 Fld. 3/1

#### CONCEPTS AND STANDARDS OF PRACTICE IN THE ANALYSIS OF ALCOHOL IN PHYSIOLOGICAL SPECIMENS

California Assoc. of Criminalists

19 Sep 1968 10p

Outlines criteria for quantitative analysis of blood, urine, and breath samples for alcohol; also defines equipment specifications and personnel qualifications required in California.

Search terms: Blood analysis\*; Alcoholic beverages; Breath analysis\*; California\*; Urinalysis; Blood alcohol levels\*; Forensic medicine\*; Evidence\*

AVAILABILITY: Corporate author

HS-005 971 Fld. 3/4; 3/1

#### ALCOHOL AND THE BRITISH DRIVER

by Anthony Grant

England. Parliament, London

Explains the provisions of the British Road Safety Act of 1967, how breath and blood analysis are made, and the legal procedures in charging drivers for drunk driving.

Search terms: Alcoholic beverages; Blood alcohol levels\*; Blood analysis\*; Breath analysis\*; Drinking drivers; Driver intoxication; Great Britain\*; Road Safety Act of 1967 (Great Britain)\*; Legal factors

AVAILABILITY: In Insurance Inst. for Highway Safety, *Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p39-49 (HS-005967)

HS-005 977 Fld. 3/4; 3/1

#### ALCOHOL AND PROBLEMS OF HIGHWAY SAFETY. THE ROLE OF SOCIAL SCIENCE RESEARCH

by Selden D. Bacon

Rutgers—The State Univ., New Brunswick, N.J. Center of Alcohol Studies  
18 refs

Social science has done little directly related to the traffic accident-alcohol

problem, although it has a methodology suitable to investigating the problem. There is considerable knowledge on the use of alcoholic beverages as a custom and a good deal of pathologic information about accidents. Work on the relationship of drinking and driving and on solutions to the problem is needed.

Search terms: Alcoholic beverages; Drinking drivers; Driver intoxication; Accident data; Sociological aspects; Highway safety; Traffic accidents; Accident investigation

AVAILABILITY: In Insurance Inst. for Highway Safety, *Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p145-164 (HS-005967)

HS-820 044 Fld. 3/1

#### HIGHWAY SAFETY PROGRAM MANUAL. VOLUME 8. ALCOHOL IN RELATION TO HIGHWAY SAFETY

National Highway Safety Bureau, Washington, D.C.

Jan 1969 59p 36 refs

One of 17 volumes, two of which (vols. 12 and 13) are as yet unissued (see HS-820 036 to HS-820 050).

The complete manual supplements the Highway Safety Program Standards and presents additional information to assist State and local agencies to implement their highway safety programs. This volume provides guidelines to the States for establishment, development, and operation of an effective program concerned with alcohol in relation to highway safety.

Search terms: Highway safety; Safety programs; State government; Local government\*; Alcoholic beverages; Drinking drivers; Law (Jurisprudence); Blood alcohol levels\*; Chemical analysis; Urinalysis\*; Breath analysis\*; Neurologic manifestations\*

AVAILABILITY: Federal Highway Administration, Washington, D.C. 20591, Attn: Records Management Branch. \$2.80

HS-006 017 Fld. 3/1; 4/1

#### DRUNKEN DRIVERS AND WILLING PASSENGERS

by D. M. Gordon

### 3/1 Alcohol (Cont.)

#### HS-006-017 (Cont.)

Published in *Law Quarterly Review* v82 n325 p62-80 (Jan 1966)

Differences of views between Australian, Canadian, and English courts are covered in cases regarding decisions of negligence in trials of intoxicated drivers who have gratuitous passengers.

Search terms: Courts; Australia\*; Canada\*; Great Britain\*; Drinking drivers; Passengers; Hazards; Law (jurisprudence)\*; Negligence\*; Legal responsibility\*; Legal factors; Risk taking\*; Alcoholism; Court decisions\*; Driver intoxication

#### HS-006 018 Fld. 3/1

### WHAT DO WE KNOW ABOUT ALCOHOL AND THE DRIVER?

by Raymond Meister

Published in *Traffic Safety* v67 n2 p8-10, 32-4 (Feb 1967)

The relationship between alcoholism, drunk driving, and their involvement in fatal automobile accidents is covered. To substantiate the theory that alcohol is a major causative factor in accidents, tests were made where subjects, using simulated trainers, had their blood alcohol level gradually increased, and their reactions in various situations were recorded; studies of accident fatalities in California were conducted and statistics compiled by age and sex factors, type of accident, blood alcohol levels, and vision; additional tests were conducted on geographical areas, and all research proved that alcohol is an important factor in driver impairment and traffic accidents. Mentioned also are the divided views on the role of the social drinker versus the alcoholic in accidents.

Search terms: Drinking drivers; Alcoholism; Problem drivers; Blood alcohol levels\*; Motor vehicle accidents; Fatalities; Driving simulation; Accident severity; Accident causes; Vision tests\*; California\*; Driver

#### HS-006 019 Fld. 3/1

### THE DEADLY TRANQUILIZER

by Royal A. Neilson

Published in *Traffic Safety* v64 n4 p8-10 (Apr 1964)

The role of alcohol as a major contributing factor in traffic accident fatalities was proved in a comprehensive study of data collected from eight California counties. Methods of attacking the drinking driver problem include implied consent for chemical tests, portable testing devices for breath, willing policemen, responsible and qualified chemical test experts, and well trained and conscientious attorneys, judges and law officers who will enforce the laws.

Search terms: Drinking drivers; Alcoholism; Blood alcohol levels\*; Chemical analysis; Single vehicle accidents; Social drinking\*; Pedestrians; California\*; Fatalities; Pedestrian intoxication; Traffic accidents; Breath analysis\*; Traffic law enforcement; Implied consent laws\*

#### HS-006 057 Fld. 2/0; 3/1

### THE EFFECTS OF ALCOHOL ON DRIVING SKILLS

by David R. McLellan

General Motors Proving Ground, Milford, Mich.

More than half the nation's 50,000 annual traffic deaths are caused by drinking drivers. This General Motors Proving Grounds study used two driving tests with film records to evaluate some of the effects of alcohol on driving skills. Few of the drivers had trouble when blood alcohol was .05%. Test results will be described in a film and related to Michigan's Implied Consent Law which accepts a legal limit of .10% blood alcohol.

Search terms: Drinking drivers; Blood alcohol levels\*; Driving tasks; Cinematography\*; Implied consent laws\*; Michigan\*; Reaction time; Performance tests; Driver intoxication; Driver performance

AVAILABILITY: In American

#### HS-006 068 Fld. 3/1

### ACCIDENT VULNERABILITY AND BLOOD ALCOHOL CONCENTRATIONS OF DRIVERS BY DEMOGRAPHIC CHARACTERISTICS

by Merton M. Hyman

Published in *Quarterly Journal of Studies on Alcohol* sup n4 p34-57 (May 1968)

Accident vulnerability according to blood alcohol concentration is presented by age, sex, marital status, race, education and occupation. Conclusions show that drivers with a blood alcohol concentration of 0.05% and over and drivers aged under 25 and over 69 were markedly over-represented among accident involved drivers, and that drunken driving is related to alienation from social ties and societal norms, frequently manifested by alcoholism and irresponsible behavior.

Search terms: Blood alcohol levels\*; Alcoholism; Age factor in accidents; Marital status; Drinking drivers; Sex factor in accidents; Demography\*; Human behavior; Sociological aspects; Fatalities; Injuries; Socioeconomic data; Driver performance; Pedestrian accidents; Pedestrian intoxication

#### HS-006 069 Fld. 3/1

### WHO SAYS THE SOCIAL DRINKER ISN'T DANGEROUS?

by Frederick J. Gassert, Jr.

Published in *Traffic Safety* v64 n5 p18-9, 39-40 (May 1964)

Simulated driving tests using three subjects with blood alcohol levels of 0.10% or less proved that drivers' movements were adversely affected by the liquor. They were less alert, careless, reactions in emergencies were slow, and timing was poor. Visual impairment, hand position, timing, knowledge of speed limits, braking action, and performance on specific problems for each of the subjects during the tests are discussed,

Search terms: Social drinking\*; Drinking drivers; Driver

### 3/1 Alcohol (Cont.)

#### HS-006-069 (Cont.)

Reaction time; Reactions (physiology); Performance tests; Visual acuity; Depth perception

#### HS-006 114 Fld. 3/1

##### VIRGINIA'S IMPLIED CONSENT STATUTE: A SURVEY AND APPRAISAL

Anonymous

Published in *Virginia Law Review* v49 p386-410 (Mar 1963) 82 refs

The mechanics of implied consent laws are examined, with emphasis on the constitutional objections. The major segments of the Virginia statute are analyzed and the fundamental provisions set forth.

Search terms: Implied consent laws\*; Drinking drivers; Driver intoxication; Virginia\*; Self incrimination\*; Constitutional law\*; Legal rights; Blood alcohol levels\*; Blood analysis\*; Court decisions\*

#### HS-006 116 Fld. 3/1; 4/1

##### IMPLIED CONSENT TO A CHEMICAL TEST FOR INTOXICATION: DOUBTS ABOUT SECTION 6-205 OF THE UNIFORM VEHICLE CODE

Anonymous

Published in *University of Chicago Law Review* v31 p603-11 (Spr 1964) 59 refs

Among the legal difficulties discussed are: whether test should be given to an unconscious person, whether refusal to take test is evidence of guilt, whether tests constitute self incrimination, whether tests violate constitutional rights. Various court decisions dealing with these matters are outlined.

Search terms: Uniform Vehicle Code\*; Implied consent laws\*; Chemical analysis; Blood analysis; Drinking drivers; Self incrimination; Constitutional law\*; Legal rights; Evidence\*; Driver intoxication;

#### HS-006 180 Fld. 3/1

##### THE ROAD SAFETY ACT 1967 AND ITS EFFECT ON ROAD ACCIDENTS IN THE UNITED KINGDOM

by J. W. S. Dempster

Published in *Traffic Digest and Review* v17 n8 p3-8 (Aug 1969) 7 refs

The introduction of the statutory blood alcohol level (0.08%) for drivers in the United Kingdom led to a marked fall in road accidents. However, 15% of drivers who are killed in road accidents still have blood alcohol levels of over 0.08% and 11% have levels of over 0.15%. The author concludes there is still a long way to go before the problem of the drinking driver is solved in the United Kingdom.

Search terms; Road Safety Act of 1967 (Great Britain)\*; Drinking drivers; Great Britain\*; Blood alcohol levels\*; Accident data; Fatalities; Accident prevention; Driver intoxication; Safety campaigns; Accident rates

#### HS-006 181 Fld. 3/1

##### DRUNKEN DRIVING—THE CIVIL RESPONSIBILITY OF THE PURVEYOR OF INTOXICATING LIQUOR

by Daniel E. Johnson

Published in *Indiana Law Journal* v37 n3 p317-31 (Spring 1962) 67 refs

The degree of responsibility of sellers of intoxicating liquors to drivers whom they know to be predisposed to the misuse of alcohol, and who become involved in automobile accidents, is discussed. Court decisions, pro and con, are cited. The Common Law Rule, civil damage legislation, and civil liability of the liquor purveyor for drunken driving of customers disqualified by age, condition, or capacity from consuming liquor are discussed.

Search terms: Drinking drivers; Driver intoxication; Court decisions\*; Legal responsibility\*; Financial responsibility; Alcoholic beverages; Motor vehicle accidents; Negligence\*; Liability\*; Age factor

#### HS-006 182 Fld. 3/1

##### PHYSIOLOGICAL IMPAIRMENT AND PERSONALITY FACTORS IN TRAFFIC ACCIDENTS OF ALCOHOLICS

by Reginald G. Smart; Wolfgang Schmidt

Published in *Quarterly Journal of Studies on Alcohol* v30 n2 p440-5 (Jun 1969) 20 refs

Studies and tests measuring physiological and psychological involvement as two major factors in traffic accidents of alcoholics are compared. Age factors, suicidal tendencies, psychopathological variables, blood alcohol levels, accident types, and sensorimotor impairment of the alcoholic in connection with accidents are also discussed in this review article.

Search terms: Alcoholism; Blood alcohol levels\*; Drinking drivers; Driver physical fitness; Psychological factors; Age factor in accidents; Suicide\*; Traffic accidents; Accident factors; Reviews\*; Driver intoxication; Accident types

#### HS-006 183 Fld. 3/1

##### DRINK AND DRIVING

by G. R. Scott

Published in *New Zealand Medical Journal* v68 p360-4 (Dec 1968) 8 refs

A survey was made of blood alcohol levels from three categories of drivers: those victims of motor vehicle accidents who were admitted to a neurosurgical ward, those convicted of driving under the influence of alcohol, and those killed in motor vehicle accidents. 60% of the accident victims admitted to neurosurgical wards, 100% of the "driving under the influence" drivers, and 55% of the fatally injured drivers had blood alcohol levels of 100mg/100ml or more. The age group 16-20 had a larger representation in all three categories than any other five-year group. The sampling, however, was quite small.

Search terms: Blood alcohol levels\*; Drinking drivers; Driver intoxication; Age factor in accidents; New Zealand\*; Fatalities;

### 3/1 Alcohol (Cont.)

HS-006 184 Fld. 3/1

#### RESPONSIBILITY, BLOOD ALCOHOL LEVELS, AND ALCOHOLISM

by Reginald G. Smart; Wolfgang Schmidt

Published in *Traffic Safety and Research Review* v11 n4 p112-6 (Dec 1967) 23 refs

Prepared for presentation at the Prevention of Highway Injury symposium, Univ. of Michigan, 1967.

The blood alcohol levels of alcoholics in alcohol-related accidents, their responsibility for their accidents, and the characteristics of their accidents were studied in the Toronto area. More alcoholics and problem drinkers were found in the alcohol-related accident group than in the non-alcohol accident group. These excessive drinkers had higher blood alcohol levels and greater responsibility scores than non-alcoholics in alcohol-accidents, and had more accidents at night and fewer in daytime in comparison with non-alcoholics. Although nearly three times as many excessive drinkers were found in the alcohol-accident group as in the non-alcohol-accident group, the percentage was smaller than previous studies would indicate.

Search terms: Blood alcohol levels\*; Alcoholism; Drinking drivers; Driver intoxication; Toronto\*; Accident responsibility; Accident causes; Time factors\*; Accident studies

HS-006 231 Fld. 3/1; 4/6

#### ALCOHOL IN TRAFFIC ACCIDENTS. THE EFFECT ON AUTOMOBILE INSURANCE COSTS, COURT CASE LOADS, AND UNDERWRITING SELECTION

by Donald E. O'Brien

Texas. State Board of Insurance, Austin

Sep 1968 24p

A review and analysis of automobile accident statistics and research studies pertinent to drinking drivers is presented. Also determined is the impact of alcohol on automobile insurance accident costs, as a stimulus to

litigation and as a contributing factor to underwriting selection. Alcohol is a factor in 50% of all fatalities. Accidents involving alcohol are a major factor in the high cost of automobile insurance; such accidents result in more court cases; and unless this type of accident is controlled the cost and effectiveness of any type of automobile insurance system will be unsatisfactory. Varying blood alcohol levels used as the standard of drunkenness in different states are also discussed.

Search terms: Insurance industry; Insurance rates; Drinking drivers; Fatalities; Accident studies; Driver intoxication; Blood alcohol levels; Alcoholism; Automobile accidents; Accident data

AVAILABILITY: Corporate author

HS-006 288 Fld. 3/1

#### EFFECTS OF ALCOHOL ON SOME PSYCHOLOGICAL PROCESSES. A Critical Review With Special Reference To Automobile Driving Skill.

by John A. Carpenter

Published in *Quarterly Journal of Studies on Alcohol* v23 n2 p274-314 (Jun 1962) 79 refs

This review examines reports appearing since 1940 on the effects of a alcohol on driving. Topics discussed include: reaction time, motor skills, positional nystagmus, sensory processes, intellectual functions, tests of driving skill, validity of driving tests, subject variability, and methodological questions.

Search terms: Alcoholic beverages; Physiological effects\*; Driver behavior; Driving tasks; Driver skills; Nystagmus; Vision disorders; Vision; Reaction time; Psychological tests; Blood alcohol levels. Driver physical fitness; Driver intoxication; Drinking drivers' Reviews; Driver tests; Driver performance

HS-006 289 Fld. 3/1; 1/3

#### FACT AND FICTION ABOUT ACCIDENTAL INJURY

by Julian A. Waller

Published in *Northwest Medicine* v67 n5 p451-7 (May 1968) 14 refs

Presented at 14th Annual Pacific Northwest Occupational Health Conference, Portland, Oregon, Nov. 14, 1967.

Accidental injury commonly is still thought of in a prescientific manner and has as yet benefited only rarely from rational consideration. Due to inadequately collected data, injury is still being considered the result of sinfulness, carelessness, thoughtlessness, or inattention, and not as the result of concurrence of forces. A single factor may produce multiple effects and a single effect may result from the combined operation of several factors. Alcohol and drinking drivers are major factors in highway and non-highway injury. Even low blood concentrations of alcohol will impair ability to cope with hazardous conditions. Most persons injured after drinking have high concentrations and are problem drinkers.

Search terms: Injury factors; Accident factors; Driver intoxication; Drinking drivers; Public opinion; Accident causes; Fatalities; Blood alcohol levels; Alcoholism

HS-006 290 Fld. 3/1; 3/4

#### THE EFFECTS OF ALCOHOL ON DECISION-MAKING WITH RESPECT TO TRAFFIC SIGNALS

by Everett M. Lewis, Jr.; Kiriako Sarlanis

Environmental Control Administration, Providence, R.I. Injury Control Research Lab.

Sep 1968 30p 11 refs  
Report no. ICRL-RR-68-4

A study to determine whether the ability to perform simple driving tasks is impaired at blood alcohol of .05-.10%, and whether degree of impairment differs as a function of rising or falling blood alcohol curve is discussed. 20 subjects between 21 and 38 years of age were tested in a driving simulator for their ability to react appropriately to a traffic signal light. Runs were made at different speeds and at different blood alcohol levels. Results showed that the moderate blood alcohol level tested did significantly impair simple driving task performance, and that an identical blood alcohol level produced

### 3/1 Alcohol (Cont.)

#### HS-006-290 (Cont.)

fewer errors on the descending curve than on the ascending one.

Search terms: Blood alcohol levels; Driver performance; Drinking drivers; Driving simulation; Traffic signals; Young adult drivers; Adult drivers; Reactions (physiology)

AVAILABILITY: Corporate author

#### HS-006 301 Fld. 3/7; 3/1

##### DRUGS, DRIVING, DANGER!

by Harris Edward Dark

Published in *Analogy* p19-21 (Winter 1968)

Drivers should be warned of the potential danger inherent in certain drugs—barbiturates, tranquilizers, analgesics, antihistamines. Especially when combined with alcohol, many drugs have a synergistic effect and make a driver too sleepy to drive safely.

Search terms: Drugs; Alcoholic beverages; Medical conditions; Accident causes; Synergism; Driver physical fitness; Barbiturates; Tranquilizers; Antihistamines; Analgesics

#### HS-006 302 Fld. 3/7; 3/1

##### PSYCHOACTIVE DRUGS AND TRAFFIC ACCIDENTS

by Reginald G. Smart; Wolfgang Schmidt; Karen Bateman

Published in *Journal of Safety Research* v1 n2 p67-73 (Jun 1969) 24 refs

The accident rates of 30 psychoactive drug abusers seen at a clinic in Toronto were examined. The group included persons addicted to or dependent on barbiturates, tranquilizers, and stimulants; half were also dependent on alcohol. The psychoactive drug abusers had accident rates about twice as high as expected for their age, sex, and driving exposure. Most of the excess was attributed to amphetamines.

Search terms: Accident factors; Drugs; Amphetamines; Accident studies; Accident rates; Alcoholism; Barbiturates; Tranquilizers; Stimu-

lants; Drug addiction; Age factor in accidents; Sex factor in accidents; Driving experience; Toronto

#### HS-006 303 Fld. 3/9; 3/1

##### MEDICAL IMPAIRMENT AND HIGHWAY CRASHES

by Julian A. Waller

Published in *Journal of the American Medical Association* v208 n12 p2293-6 (23 Jun 1969) 22 refs

Presented to American Medical Association Automotive Safety Symposium, Washington, D.C., Sept. 13, 1968.

Impairment to drivers or pedestrians from chronic medical problems, is believed to be a contributing factor in 15% to 25% of highway crashes. In addition, alcoholism is a factor in a third of fatal crashes. Most drivers with medical problems should be reported to licensing authorities, and about a quarter should have their licenses revoked.

Search terms: Drugs; Accident rates; Pedestrian characteristics; Accident causes; Alcoholism; Driver licensing; Age factor in accidents; Medical conditions; Physicians; Drinking drivers; Driver intoxication; Driver license revocation; Driver physical fitness

#### HS-006 306 Fld. 3/12; 3/11; 3/1

##### THE ABILITY TO SEE A PEDESTRIAN AT NIGHT: THE EFFECTS OF CLOTHING, REFLECTORIZATION AND DRIVER INTOXICATION

by Richard D. Hazlett; Merrill J. Allen

Published in *Archives of American Academy of Optometry* v445 n4 246-58 (Apr 1968) 18 refs

In the United States, pedestrian deaths account for nearly 20% of all traffic fatalities. At low levels of illumination sensitivity to contrast decreases as an individual's blood alcohol level increases. Dummies covered with white fabric were safely visible at 50 mph; only reflectorized dummies were safely visible above that speed. At blood alcohol levels greater than 0.04% a significant decrease in mean visibility distance

occurred for each of the simulated pedestrian conditions.

Search terms: Pedestrian safety; Drinking drivers; Visibility; Blood alcohol levels; Night driving; Dummies; Fatalities; Driver intoxication; Color perception; Pedestrian accidents; Visual perception; Laboratory tests; Road tests

#### HS-006 342 Fld. 3/1

##### THE 1967 DRINK AND DRIVING CAMPAIGN: A SURVEY AMONG DRIVERS

by D. Sheppard

England. Road Research Lab., Crowthorne, Berks.

1968 56p

Report no. RRL-LR-230; PB-184 270

The results are described of two national surveys designed to assess the effect of the new drinking and driving law and the publicity campaign. Results showed that drivers drank away from home as often as before, but were less likely to drive back after drinking. Among drivers there is an increase in knowledge about the new law and its meaning, and few disapprove of the police powers. However, the drivers' estimate of the maximum amount of alcohol consumed without affecting their driving has not been lowered. The implications of these results are discussed including the extent to which changes came about because of the law, the campaign, or publicity.

Search terms: Great Britain; Drinking drivers; Driver intoxication; Road Safety Act of 1967 (Great Britain); Driver behavior; Driver attitudes; Safety campaigns; Safety propaganda; Breath analysis; Penalties; Law enforcement; Police; Blood alcohol levels; Interviews

AVAILABILITY: CFSTI as PB-184 270

#### HS-006 343 Fld. 3/1

##### ALCOHOL PROBLEMS AND TRANSPORTATION SAFETY: THE NEED FOR COORDINATED EFFORTS. SPECIAL STUDY

National Transportation Safety Board, Washington, D.C.

20 Feb 1969 16p 28 refs

HS-006-343 (Cont.)

Alcohol is involved in more than 40% of the fatalities in all modes of transportation. Its role in highway accidents, aviation accidents, marine and railroad accidents, and in social problems is outlined. It is recommended that the Department of Transportation should coordinate problems in the different modes of transportation involving alcohol, particularly in highway transportation.

Search terms: Alcoholic beverages; Fatalities; Drinking drivers; Marine accidents; Accident causes; Aviation accidents; Railroad accidents; Driver intoxication; Intoxication; Sociological aspects

AVAILABILITY: Corporate author

HS-006 392 Fid. 3/1; 4/1

**MANSLAUGHTER: AUTOMOBILE OWNER WHO PERMITTED INTOXICATED PERSON TO DRIVE NOT RESPONSIBLE FOR FATAL COLLISION**

Anonymous

Published in *Minnesota Law Review* v46 p414-20 (Dec 1961) 32 refs

A Michigan case is discussed in which the auto owner was convicted of involuntary manslaughter as well as the misdemeanor of permitting an intoxicated person to drive his car. The drunk driver suffered a head-on collision with another car, killing both drivers. The owner was not in the car. The Michigan Supreme Court reversed the conviction for manslaughter but allowed the misdemeanor conviction to stand. It is argued that allowing a drunk to drive should be grounds for manslaughter conviction of the owner as well as the drunken driver.

Search terms: Court decisions; Michigan; Driver intoxication; Drinking drivers; Head on collisions; Fatalities; Convictions; Manslaughter; Loaned vehicles

HS-820 056 Fid. 3/1

**HIGHWAY SAFETY PROGRAM**

**PRIORITIES SEMINAR, FREDERICKSBURG, VIRGINIA, JULY 18-20, 1969. PROCEEDINGS, VOL. 2: ALCOHOL AND HIGHWAY SAFETY COUNTERMEASURES**

National Highway Safety Bureau, Washington, D.C.

1969 80p 20 refs  
Report no. PB-186 269

Results of a study of potential alcohol countermeasures are summarized. Their effectiveness is difficult to evaluate, since some are completely untried and others have had only limited implementation. The available information on the nature of the drinking-driving problem is reviewed, the weaknesses of the present enforcement systems analyzed, and an action program for the National Highway Safety Bureau recommended, including demonstration projects, manpower development programs, and countermeasures research.

Search terms: Drinking drivers; Driver intoxication; Law enforcement; Blood alcohol levels; Chemical analysis; Alcoholism; Problem drivers; Sociological aspects; National Highway Safety Bureau; Safety programs; Driver license suspensions; Manpower utilization; Penalties

AVAILABILITY: CFSTI as PB-186 269

HS-006 456 Fid. 3/1

**ALCOHOL AND ROAD SAFETY. COUNTERMEASURES AND RESEARCH. A CRITICAL SURVEY OF THE LITERATURE. 2ND EDITION**

by D. J. Grief

Stichting Wetenschappelijk Onderzoek Verkeersveiligheid, Voorburg (Netherlands)

1969 43p 56 refs

The nature of the drinking and driving problem has been surveyed, including blood alcohol level, accident involvement of drinking drivers, and the sociological characteristics of such drivers. Countermeasures against drinking drivers are discussed. The survey and literature review cover several countries. The problem in the Netherlands is emphasized.

Search terms: Drinking drivers; Driver intoxication; Driver characteristics; Accident types; Blood alcohol levels; Accident studies; Accident factors; Age factor in accidents; Sociological aspects; Law enforcement; Penalties; Netherlands; Reviews

AVAILABILITY: Corporate author

HS-006 457 Fid. 3/1

**OREGON STUDY OF DRINKING DRIVERS**

by Noel Kaestner; Vinita Howard, Edward Warmoth

Oregon. Dept. of Transportation, Salem. Motor Vehicles Div.

Jul 1969 159p 24 refs

This study of Oregon drivers convicted of driving under the influence of intoxicating liquor was based on data from 1,025 arrest abstracts. Five factors were involved: circumstances of arrest, personal case histories, consequences of convictions, interrelationship of various factors, and development of a composite picture. Some of the findings showed: that average blood alcohol level was 0.21%, that about 91% of the convicted drivers were males averaging 40 years of age, that 3 in 10 arrests involved a collision, that 1 in 4 drivers convicted had a past criminal record, that these drivers were lower than average in socioeconomic status. It is concluded that these drivers are problem people in general.

Search terms: Oregon; Drinking drivers; Convictions; Socioeconomic data; Arrests; Accident factors; Accident data; Alcoholism; Driver records; Sex factor in driving; Age factor in driving; Problem drivers; Collisions (accidents); Blood alcohol levels

AVAILABILITY: Corporate author

HS-006 467 Fid. 3/7; 3/1

**INFLUENCE OF DRUGS ON DRIVING**

by W. H. Neil

Published in *Texas State Journal of Medicine* v58 p92-7 (Feb 1962) 18 refs

### 3/1 Alcohol (Cont.)

HS-006-467 (Cont.)

Excerpted in *Traffic Safety*, Apr 1963 as **THE EFFECTS OF DRUGS ON THE DRIVER**

Although many drugs can influence a person's ability to drive safely, no statistics indicate the extent to which drugs (except alcohol) are a causative factor in motor vehicle accidents. Until demonstrative statistics can be compiled, no legislation is practical. Physicians can only warn patients of inherent dangers in taking drugs and driving.

Search terms: Alcoholic beverages; Drugs; Accident causes; Injuries; Fatalities; Legislation; Driver licensing; Driver restrictions; Physiological effects\*; Driver physical fitness

HS-006 517 Fld. 3/1

**ON THE LEVEL: WHAT YOU SHOULD KNOW ABOUT ALCOHOL AND ACCIDENTS**

by Donald L. Anderson; Donald C. Lhotka

National Safety Council, Chicago, Ill. Traffic Dept.

1969 30p 37 refs

Report no. Traffic Safety Mono-1

This monograph covers more than the relationship of alcohol and highway safety; it also explores the role of alcohol in accidents at home, at work, and at play. A questionnaire—What Do You Know About Drinking Alcoholic Beverages?—is included.

Search terms: Alcoholic beverages; Questionnaires; Drinking drivers; Traffic law enforcement; Implied consent laws; Chemical analysis; Traffic accidents; Blood alcohol levels; Accident causes; Driver intoxication; Drugs; Synergism

AVAILABILITY: Corporate author

HS-006 617 Fld. 3/1; 1/3

**STUDIES OF TRAFFIC DEATHS POINT TO DRINKING DRIVER**

Anonymous

Published in *Automotive News* p29, 32 (26 Sep 1966)

What really causes traffic deaths and injuries—vehicles, drivers, or highways? In this assessment of the causes of highway fatalities, the automotive industry suggests that all factors be examined. From the information already available, the bulk of non-pedestrian fatalities can be attributed to speeding, drinking, or carelessness rather than mechanical defects of the automobile.

Search terms: Fatalities; Injuries; Accident causes; Defective vehicles; Accident factors; Drinking drivers; Highway safety; Careless driving; Driver intoxication

HS-006 618 Fld. 3/1

**ALCOHOLISM AND PSYCHOLOGICAL DIFFERENTIATION: EFFECT OF ACHIEVEMENT OF SOBRIETY ON FIELD DEPENDENCE**

by Stephen A. Karp; Herman A. Witkin; Donald R. Goodenough

Published in *Quarterly Journal of Studies on Alcohol* v26 n4 p580-5 (1965)

9 refs

Grant MH-00628-11

This study is part of a series concerned with the question whether extreme perceptual field dependence persists through various phases of the alcoholism cycle, and whether it contributes to alcoholism or is a consequence of it. Four groups of male alcoholics were studied. No significant difference in extent of field dependence was found between drinking and abstaining alcoholics. It appears that field dependence is a prior condition to the development of alcoholism.

Search terms: Alcoholism; Psychological factors; Psychological tests; Males

HS-006-685 Fld. 3/1

**ALCOHOL AND TRAFFIC SAFETY**  
Anonymous

Published in *Social Progress* v52 n8 p16-21 (Jul 1962)

Recommendations of the General Assembly of the Presbyterian Church on the drinking driver problem are outlined. Preventing accidents caused by intoxicated drivers, more severe

laws, blood alcohol levels, more responsible attitudes towards driving after drinking are discussed.

Search terms: Drinking drivers; Driver intoxication; Accident prevention; Blood alcohol levels; Driver attitudes; Driver behavior; Law enforcement

HS-006 686 Fld. 3/1

**THE DRINKING DRIVER**

by Simon Freeman

Published in *Nursing Times* v64 698-1701 (13 Dec 1968)

Outlines the drinking driver problem, especially in Great Britain. The effects of alcohol on driving skill, the setting of blood alcohol levels considered proof of intoxication, and the changing drinking habits of people are discussed.

Search terms: Blood alcohol levels; Drinking drivers; Driver intoxication; Driver skills; Great Britain; Driver license suspension

HS-006 687 Fld. 3/1

**SOME COMMENTS ON RECENT DRUNK DRIVING STUDIES**

by Royal A. Neilson

Published in *Caldea Calendar* v15 n4 p9-10,20 (Jun 1968)

Presented before the American Bar Association Traffic Court Conference, University of Southern California, 2 Feb 1968.

The nature of the drinking driver problem, especially in California, is outlined. Drinking patterns, alcohol involvement of drivers and pedestrians as shown in accident reports, and attempts to control the problem through legislation are discussed.

Search terms: Drinking drivers; Driver intoxication; Blood alcohol levels; California; Law (jurisprudence); Accident reports; Accident causes; Pedestrian accidents

HS-006 738 Fld. 3/1

**SUGGESTIONS FOR EDUCATIONAL PROGRAMS ABOUT ALCOHOL AND HIGHWAY SAFETY**

by Julian A. Waller

Published in *Traffic Engineering &*

**HS-006-738 (Cont.)**

*Research Review* v12 n3 p66-70 (Sep 1968) 19 refs

Basic guidelines are given for developing alcohol education programs. A breakdown of the groups to be reached is given and includes not only the drinking populations but those who indirectly influence their behavior, such as judges and driver licensing personnel, and those whose activities are related to accident prevention, such as physicians, police, and legislators. The basic body of information which should be made available to the general public is outlined.

Search terms: Drinking drivers; Alcoholic beverages; Driver intoxication; Public relations; Safety propaganda; Alcoholism; Driver behavior; Accident prevention; Safety campaigns

### 3/2 ANTHROPOMORPHIC DATA

HS-800 019

RESEARCH IN CRASHWORTHINESS  
OF VEHICLE STRUCTURES. VOL. 1  
Wyle Lab., Huntsville, Ala.  
by D. J. Bozich  
Mar 1968 96 p.  
WR-68-3-[1]  
FH-11-6669  
AVAILABILITY: From CFST1

Program of basic studies to  
deal with long-range research  
involving: carefully instru-  
mented experimental crashes  
closely correlated with  
intensive medico-engineering  
investigations for actual  
crashes; use of laboratory  
static and dynamic tests  
including detailed structural  
analysis evaluated against  
field observations; and  
evaluation of human body as  
a structure to develop means  
of supporting and protecting  
it for crash injury.

HS-004 441 Fld. 1/0,3/2

STATIC DEFORMATION AND VOLUME  
CHANGES IN THE HUMAN SKULL  
by L. M. Thomas, Y. Sezgin,  
V. R. Hodgson, L. K. Cheng,  
E. S. Gurdjian  
Wayne State Univ., Detroit,  
Mich.

Report no. SAE-680782

Impact tests with cadaver  
heads measured skull de-  
flections, intracranial  
volume changes, and fracture  
patterns.

Search terms: Deformation,  
Cadavers, Fractures, Head  
injuries, Skull, Impact  
tests

AVAILABILITY: In Society of  
Automotive Engineers, Inc.,  
New York, Proceedings of  
Twelfth Stapp Car Crash Con-  
ference, October 22-23, 1968,  
p260-70 (HS-004 429)

HS-004 442 Fld. 1/0,3/2

CHANGES IN PHYSICAL PROPER-  
TIES OF BONE BETWEEN THE IN

VIVO, FRESHLY DEAD, AND  
EMBALMED CONDITIONS  
by S. W. Greenberg,  
D. Gonzalez, E. S. Gurdjian,  
L. M. Thomas  
Wayne State Univ., Detroit,  
Mich.

Report no. SAE-680783

Knowledge of state of  
physical properties of  
cadavers is important if  
they are utilized for im-  
pact studies. Results of  
tests indicate less than  
5% change from live to  
fresh condition. In em-  
balled wet condition stiffen-  
ing averages around 8%.  
Drying of embalmed bone  
further increases stiffness  
about 24% and reconstituting  
reconstitutes some of ini-  
tial flexibility.

Search terms: Impact  
studies, Bones, Cadavers

AVAILABILITY: In Society of  
Automotive Engineers, Inc.,  
New York, Proceedings of  
Twelfth Stapp Car Crash  
Conference, October 22-23,  
1968, p271-9 (HS-004 429)

HS-004 443 Fld. 1/0,3/2,4/7

DYNAMIC RESPONSE OF THE  
HUMAN/CADAVER HEAD COMPARED  
TO A SIMPLE MATHEMATICAL  
MODEL

by V. R. Hodgson,  
L. M. Patrick  
Wayne State Univ.,  
Detroit, Mich.

Report no. SAE-680784

A method is derived for  
comparing the impact re-  
sponse of a simple system  
to a general shaped pulse  
to that of the cadaver  
head. Under certain impact  
conditions it is found  
that a simple model responds  
to cadaver force-time input  
within 5% of cadaver occi-  
pital response over a broad  
range of pulse durations  
and acceleration levels.  
Ten conclusions are  
presented.

Search terms: Head  
injuries, Acceleration  
patterns, Mathematical

models, Impact studies,  
Cadavers

AVAILABILITY: In Society  
of Automotive Engineers,  
Inc., New York, Proceedings  
of Twelfth Stapp Car Crash  
Conference, October 22-23,  
1968, p280-301 (HS-004 429)

HS-004 444 Fld. 1/0,3/2

IMPACT TOLERANCE OF THE  
SKULL AND FACE  
by Alan M. Nahum,  
James D. Catts, Charles  
W. Gadd, Gohn Danforth  
California Univ., Los  
Angeles. School of Medicine  
and General Motors Research  
Labs., Warren, Mich.

Report no. SAE-680785

Forces necessary for  
fracture under localized  
loading have been obtained  
experimentally for a number  
of regions of the head.  
Three of these, the frontal,  
temporoparietal, and  
zygomatic, have been studied  
in sufficient detail to es-  
tablish that tolerances  
are relatively independent  
of impulse duration, in  
contrast with tolerance of  
brain to closed-skull in-  
jury. Lower average strength  
has been found for female  
bone structure. Includes  
brief reports on mandible,  
maxilla, and laryngotracheal  
cartilages of neck.

Search terms: Impact  
studies, Head injuries,  
Facial injuries, Frac-  
tures, Neck injuries

AVAILABILITY: In Society  
of Automotive Engineers,  
Inc., New York, Proceedings  
of Twelfth Stapp Car Crash  
Conference, October 22-23,  
1968, p302-16 (HS-004 429)

HS-004 445 Fld. 1/0,3/2

APPLICATIONS OF EXPERI-  
MENTAL HEAD INJURY RESEARCH  
by John M. Douglass,  
Alan M. Nahum,  
Sanford B. Roberts  
California Univ.,  
Los Angeles

### 3/2 Anthropomorphic Data (Cont.)

HS-004-445 (Cont.)

Report no. SAE-680786

Head injury is largest single cause of auto accident deaths. The types of mechanisms of head injury are reviewed, and the findings of study on electrophysiology of concussion in monkeys presented.

Search terms: Head injuries, Injury severity, Injury research, Laboratory animals, Brain concussion, Accident severity, Electrophysiology, Fractures

AVAILABILITY: In Society of Automotive Engineers, Inc., New York, Proceedings of Twelfth Stapp Car Crash Conference, October 22-23, 1968, p317-37 (HS-004 429)

HS-004 451 Fld. 1/0,3/2

DYNAMIC RESPONSE OF THE HEAD AND NECK OF THE LIVING HUMAN TO -Gx IMPACT ACCELERATION

by Channing L. Ewing, Daniel J. Thomas, George W. Beeler, Jr., Lawrence M. Patrick, David B. Gillis  
Naval Aerospace Medical Inst., Pensacola, Fla. and Army Aeromedical Research Unit, Fort Rucker, Ala.  
Report no. SAE-680792

Tests with acceleration sled. Volunteers wearing complete pelvic and upper torso restraint were subjected to increasing impact accelerations beginning at 2.7 g. Precision inertial transducers were used to determine linear and angular acceleration of head and first thoracic vertebra. High speed cameras were used to determine head and neck displacements. Trajectories were calculated by digital computer. Photographic data system is redundant.

Search terms: Acceleration

tolerance, Impact tolerance, Head injuries, Neck injuries, Photography, Impact sleds, Pelvic restraint, Torso restraint, Digital computers, Transducers, Acceleration patterns

AVAILABILITY: In Society of Automotive Engineers, Inc., New York, Proceedings of Twelfth Stapp Car Crash Conference, October 22-23, 1968, p424-39 (HS-004 429)

HS-004 483 Fld. 3/2

DUMMIES ARE MADE, NOT BORN  
Anonymous

Published in American Youth  
p20-1 (Nov-Dec 1968)

Describes dummy which simulates the human body, used with impact sled tests.

Search terms: Crash simulation, Human body simulation, Impact sleds, Anthropometric dummies

HS-004 519 Fld. 1/3,3/2

THE PROBLEMS: BIOMECHANICS OF INJURY  
by John P. Stapp

1967 15 refs

Offers 9 specific measures for crash protection based on human tolerance limits and vehicle design. Limits were established by response characteristics of the human body to collision impact. Conformity with these human requirements should go far in reducing frequency of fatalities and severity of injuries in automotive vehicle accidents.

Search terms: Biomechanics, Injuries, Human factors engineering, Automobile design, Human body, Crash injury data, Impact tolerance

AVAILABILITY: In Mich. Univ. Prevention of Highway Injury, p159-64 (HS-004 500)

HS-004 608 Fld. 5/14,3/2

VEHICLE CRASH RESEARCH AND MANUFACTURING EXPERIENCE by L. C. Lundstrom  
General Motors Corp., Detroit, Mich.

8p

Report no. SAE-680543  
Presented at West Coast Meeting, San Francisco, Calif., 12-15 Aug 1968

Search for improvements in occupant protection under vehicle impact is hampered by lack of reliable biomechanical data. Research on head and facial trauma is described, using a human simulating headform and a pressure sensitive metal foam. Research applied directly to product design also has culminated in developments like the side-guard beam for side impact protection. Restraint systems for protection in frontal impacts are also discussed.

Search terms: Restraint systems, Side impact collisions, Impact collisions Head injuries, Facial injuries, Human body simulation, Dummies, Pressure, Motor vehicle design, Occupant protection\*, Impact protection

AVAILABILITY: From SAE

HS-810 060 Fld. 1/3,3/2

HUMAN CRITERIA FOR PROTECTION FROM VEHICLE CRASH IMPACT  
by John P. Stapp  
National Highway Safety Bureau, Washington, D. C.

13-17 Jan 1969 5p 17 refs  
Report no. SAE-690104

Presented at International Automotive Engineering Congress, Detroit, Mich.

Criteria for impact tolerance and survival standards in military and aviation space flight can be based on experiments with healthy male volunteers representative of air and space flight crews. Similar standards criteria for automotive crashes are

### 3/2 Anthropomorphic Data (Cont.)

HS-810-060 (Cont.)

unavailable as these may also involve pregnant females, infants, children, and the aged and infirm, excluded for humanitarian reasons from such experiments. Indirect alternatives suggested include: extrapolation from actual impact experiments (such as those above); correlation of data from free falls or actual crashes with measured or estimated impact forces; use of cadavers, anesthetized animals, or anthropometric dummies; computer simulation analysis.

Search terms: Crash injury research, Human body simulation, Cadavers, Human factors engineering, Experimentation, Animal experiments\*, Anthropometric dummies, Automobile accidents, Computerized simulation

AVAILABILITY: From SAE

HS-004 892 Fld. 5/4,3/2

METHODS FOR DETERMINING DRIVER REACH CAPABILITY  
by J. W. Chaffee  
Ford Motor Co., Dearborn, Mich.  
Automotive Safety Research Office

13-17 Jan 1969 13p 12 refs  
Report no. SAE-690105  
Presented at International Automotive Engineering Congress, Detroit, Mich.

Presents a method of determining the reach envelope (ergosphere) of vehicle operators with an example of the measured ergosphere of a general automotive package geometry. Applies this method to determine percentiles of reach.

Search terms: Ergosphere\*, Driver characteristics, Front compartments, Interior design, Sex factors, Driver-vehicle interface

AVAILABILITY: From SAE

HS-004 923 Fld. 1/3,3/2,5/4

RESEARCH--VITAL TO THE FORGING

PROCESS  
by Edwin A. Kidd  
Cornell Aeronautical Lab., Inc., Buffalo, N. Y.

29 Oct 1968 20p 12 refs

Lack of understanding of the mechanisms of motor vehicle injury and accident causation seriously compromises the ability to make scientific decisions on safety improvements. Examples of research to increase understanding of vehicle crashworthiness and driver behavior are given. Computer simulation is central to such research. The effects of safety improvements can be examined by simulation of occupant trajectory during impact, vehicle trajectory during accident, or driver-vehicle behavior leading to accident.

Search terms: Computerized simulation, Accident simulation, Driving simulation, Human body simulation, Driver behavior, Accident causes, Injury research, Crashworthiness\*, Motor vehicle accidents, Accident research, Safety design, Impact studies, Driver-vehicle interface, Costs\*, Impact tests

AVAILABILITY: From corporate author

HS-005 043 Fld. 5/14,3/2

TESTS SHOW VEHICLE PASSENGERS HAVE BEST CHANCE OF SURVIVAL WITH INFLATABLE AIR BAG RESTRAINT

by R. M. Kemmerer, W. K. Slack, Richard Chute, D. P. Hass, Richard G. Snyder, Joseph W. Young, Clyde C. Snow

Published in SAE Journal v77 n1 p58-61 (Jan 1969)

Animals protected by air bags survived impact tests at higher g's than when protected by any other restraint system--but there are difficult problems to be solved before production: driver protection, sensors that can operate in a "real world" crash; prevention of intolerable noise and pressure levels.

Search terms: Animal experiments\*, Dummies, Airbag restraints\*, Passenger packaging, Crash injury research, Occupant-vehicle interface, Steering columns, Driver-vehicle interface, Human factors engineering, Noise(sound), Pressure

HS-005 090 Fld. 5/14, 3/2, 1/2

### ENGINEERING FOR BODILY STRESS

by Verne L. Roberts

Published in *Science and Technology* n70 p72-82 (Oct 1967)

Examines the world of the automobile as a biomechanical engineer sees it: in terms of the human body--its function, size, and ability to resist forces. Future research should include mathematical models of the body, more realistic dummies as human simulators, improved instrumentation for biomedical analysis.

Search terms: Biomechanics, Human body simulation, Human factors engineering, Restraint systems, Dummies, Safety design, Energy absorption, Steering wheels, Passenger packaging, Injuries, Medical treatment, Occupant protection\*, Biomechanics

HS-005 117 Fld. 3/2, 5/14

### DUMMIES EVALUATED FOR SEATBELT TESTING

Anonymous

Published in *National Bureau of Standards Technical News Bulletin* v53 n2 p36-7 (Feb 1969)

Describes NHTSB-sponsored research at NBS Office of Vehicle Systems Research.

Simulated crash studies of automobile occupant restraint systems reveal differences in reactions of dummies and humans. Special dummies will be needed for future evaluation of restraint systems for children and infants.

Search terms: Dummies, Human factors engineering, Restraint systems, Crash injury research, Impact tests, Seat belts, Impact sleds

### 3/2 Anthropomorphic Data (Cont.)

HS-810 075 Fld. 3/2

#### VOLUNTARY HUMAN TOLERANCE LEVELS

by John P. Stapp

National Highway Safety Bureau,  
Washington, D.C.

7-8 Feb 1969 38p 116 refs

Remarks for presentation at the  
Workshop on Football Injuries, St.  
Louis, Mo.

Biodynamics deals with the effects of mechanical forces on living tissues. Research and experiments in biodynamics so far have related primarily to aircraft and vehicle crash survival. The effects of falls, collision forces, and various kinds of impacts on the human body are discussed. The effects of such stresses on the heart, abdomen, neck, thorax, and whole body are outlined. Experiments testing the effects of deceleration on seat belted subjects are discussed.

Search terms: Biodynamics\*; Stress (physiology); Force characteristics; Crash research; Heart injuries; Abdomen injuries; Neck injuries; Chest injuries; Seat belts; Deceleration; Motor vehicle accidents; Aviation accidents; Collisions (accidents); Impact tolerance; Injury tolerance; Animal experiments\*; Free fall impacts

AVAILABILITY: NHSB

HS-800 149 Fld. 3/2; 5/1; 5/18

#### VEHICLE HANDLING: FORCE CAPABILITIES FOR BRAKING AND STEERING

by Howard W. Stoudt; Thomas J. Crowley; Barry Gruber; Ross A. McFarland

Harvard Univ., Boston, Mass. Guggenheim Center for Aerospace Health and Safety

21 Feb 1969 29p 5 refs

Contract FH-11-6910

Report no. PB-184 264

Women were selected as subjects to determine the lowest levels of muscular force required to operate the brake pedal, steering wheel, and hand brake. Such data can be used to

establish design standards. Handgrip strength was found to be positively related to muscular performance.

Search terms: Design standards; Biomechanics; Force; Automobile design; Human factors engineering; Driving tasks; Braking; Steering (driving); Brake systems\*; Steering wheels; Muscles\*; Anthropometry\*; Torque

AVAILABILITY: CFSTI as PB-184 264

HS-005 689 Fld. 3/2; 5/4; 3/12

#### AUTOMOBILE DRIVER EYE POSITION

by James F. Meldrum

Ford Motor Co., Dearborn, Mich.

Published in *SAE Transactions* v74  
p599-609 (1966)

Report no. SAE-650464

Describes a driver eye position survey made to provide the automobile industry with standardized data. Coordinate anthropometric measurements of eye position and top of head were recorded photographically using some 2,300 human subjects. Data were referenced to car body inch-lines and to points on manikins. Results revealed a new shape to the driver's eye position zone. The driver's eye position is an important factor in the man-machine system of driver and car.

Search terms: Anthropometry; Human factors engineering; Eye(anatomy) Eye movement; Automobile design; Dummies; Photography; Driver characteristics; Driver-vehicle interface; Eye position

HS-005 909 Fld. 5/0; 5/4; 3/2

#### THE APPLICATION OF ANTHROPOMETRY TO AUTOMOTIVE DESIGN

by Peter Kyropoulos; Ronald W. Roe  
General Motors Corp., Detroit, Mich.  
14p 12 refs

Discusses the identification and application of the pertinent dimension of the driving population and the use of these data in the design of the driver's workspace. The statistical

nature of the information is emphasized. The anthropometers which are used to gather data and their statistical evaluation and analysis are discussed. Society of Automotive Engineers' manikins and the driver's eye ellipses are also discussed.

Search terms: Populations; Data acquisition; Statistical analysis; Motor vehicle design; Dummies; Vision\*; Human factors engineering; Anthropometry\*; Human body size; Peripheral vision; Ergosphere\*

AVAILABILITY: Paper 6 in *General Motors Proving Ground, PROC. OF AUTOMOTIVE SAFETY SEMINAR*, 11-12 Jul 1968 (HS-005 901)

HS-005 910 Fld. 5/0; 5/4; 3/2

#### A THIRD GENERATION TEST DUMMY--"SOPHISTICATED SAM"

by William G. Cichowski

General Motors Proving Ground, Milford, Mich.

7p

Explains the development of an anthropomorphic dummy, the most advanced test dummy available today. It was created after study of the literature in bio-mechanics and simulates the human body as well as possible. It is useful for impact tests.

Search terms: Impact tests; Sophisticated Sam\*; Anthropomorphic dummies\*; Biomechanics; Human body simulation

AVAILABILITY: Paper 7 in *its PROC. OF AUTOMOTIVE SAFETY SEMINAR*, 11-12 Jul 1968 (HS-005 901)

HS-005 911 Fld. 5/0; 5/4; 3/2

#### "TRAMASAF" THE DEVELOPMENT OF A LABORATORY INSTRUMENT FOR TRAUMA INDICATION

by Harry G. Holcombe; Donald M. Herod

General Motors Corp., Detroit, Mich.  
8p 9 refs

Describes an instrument capable of making comparisons of lacerative damage and simulating frontal bone

### 3/2 Anthropomorphic Data (Cont.)

#### HS-005-911 (Cont.)

tolerance during small area impacts to the head. It is used for impact tests of automotive components.

Search terms: Impact tests; Head injuries; Bones\*; Human body simulation; Test equipment; Laboratory tests; Tramasaf\*; Impact tolerance; Injury research.

AVAILABILITY: Paper 8 in General Motors Proving Ground, PROC. OF AUTOMOTIVE SAFETY SEMINAR, 11-12 Jul 1968 (HS-005 901)

#### HS-005 912 Fld. 5/0; 3/2

#### A STUDY OF HEAD AND FACIAL BONE IMPACT TOLERANCES

by Charles W. Gadd; Alan M. Nahum; James Gatts; John P. Danforth

General Motors Research Labs, Warren, Mich.; California Univ., Los Angeles. Center for Health Sciences.

9p 7 refs

A progress report on a continuing study at the University of California's Los Angeles Center for the Health Sciences. The program includes direct recording of force-time profiles at the site of the blow, inclusion of the original soft tissues overlying the bone in the tests, and comparison of fresh with embalmed subjects. Impact to the side of the head over the ear has been studied, a subject where little has yet been done. Distinction is made between localized fracture hazard, not normally dangerous to life, and closed-skull or concussive brain injury which results from sudden head acceleration and for which criteria are now in use.

Search terms: Fractures\*; Head injuries; Injury research; Impact tolerance; Brain injuries; Test equipment; Injury severity; Brain concussion\*; Facial injuries; Cadavers

AVAILABILITY: Paper 9 in General Motors Proving Ground, PROC. OF AUTOMOTIVE SAFETY SEMINAR,

#### HS-005 966 Fld. 3/2; 5/14

#### DUMMIES EVALUATED FOR SEAT BELT TESTING

National Bureau of Standards, Gaithersburg, Md. Occupant Restraint Systems Section

Published in *SAE Journal* v77 n7 p48-51 (Jul 1969)

National Bureau of Standards automobile safety research has disclosed how differently anthropomorphic dummies respond from humans in tests of seat belts and harnesses. This may be because of the difference in articulation and because the human absorbs some energy by bracing his legs for an impact. Correction factors are being sought.

Search terms: Anthropomorphic dummies\*; Human body simulation; Crash injury research; Crash simulation; Seat belts; Shoulder harnesses; Energy absorption; Human factors engineering; Restraint systems; Impact tests; Performance characteristics; Deceleration; Impact sleds; Dummies; Human body; Biomechanics

#### HS-006 344 Fld. 3/2; 3/4

#### RESEARCH ACTIVITIES AT THE UCLA DRIVING SIMULATION LABORATORY

by S. Hulbert; C. Wojcik

Published in *Highway Research News* n17 p111-4 (Feb 1965) 6 refs

Presented at the 43rd annual meeting of the Highway Research Board.

The development and validation of a data system in driving simulation are described. Work on driver failure, driver fatigue, blood sugar levels, and wrong way driving on Los Angeles freeway ramps is outlined.

Search terms: Wrong way; Data processing; Automobile simulators; Driving simulation; Driver behavior; Driver fatigue; Blood sugar; Los Angeles; Ramps

#### HS-006 345 Fld. 3/2; 5/14

#### APPLICATION OF A DAMPED SPRING-MASS HUMAN VIBRATION SIMULATOR IN VIBRATION

by C. W. Suggs; D. F. Abrams; L. F. Stikleather

Published in *Ergonomics* v12 n1 p79-90 (Jan 1969)

Grant PHS-R01-U161

This system closely approximates the dynamic characteristics of a seated man to vertical modes of vibration and can serve as the basis on which a standardized vehicle seat testing procedure can be built. Analysis by mechanical impedance techniques indicated that a two-degree-of-freedom system was sufficient to simulate the major dynamic characteristics of man in frequencies where seat vibration is most severe.

Search terms: Human body simulation; Test equipment; Seats; Seat design; Vibration; Mathematical analysis

#### HS-006 739 Fld. 3/2; 1/2

#### NEW LAB TOOLS AID STUDY OF LOCALIZED HEAD AND FACIAL TRAUMA DURING VEHICLE IMPACT

by L. C. Lundstrom

Published in *SAE Journal* v77 n11 p22-6 (Nov 1969)

A program to study localized head and facial trauma resulting from vehicle accidents has led to the development of several laboratory testing tools for helping engineers design vehicle interiors to higher levels of safety. Three of these tools are described: (1) MetNet—a new type of pressure recorder made of metal foam; (2) a free-fall device for local head and facial bone impact study; and (3) Tramasaf—a human-simulating headform.

Search terms: Biomechanics; Interior design; Tramasaf; Human body simulation; Facial injuries; Impact protection; Laboratory tests; Crash simulation; Safety design; Head injuries; Foam metals

### 3/3 CYCLISTS

HS-004 492 Fld. 5/3,3/3

THE NEED FOR MOTORCYCLE SAFETY  
Anonymous

Published in California Highway Patrolman v32 n9 p9,46-9,59 (Nov 1968)

Surveys the motorcycle accident problem, characteristics of the drivers and vehicles, and suggested safety measures.

Search terms: Motorcycle safety, Driver characteristics, Motorcycle accidents

HS-004 781 Fld. 5/3,3/3

MOTORCYCLING'S HIDDEN HAZARDS  
Anonymous

Published in Motor Cyclist n861 p35-7 (Jan 1969)

Lists "regular hazards" to motorcycle riders: rocks on the road, steel mesh on bridge floors, painted white lines which are slick when wet, manhole covers, sand on road, grooved roads, streetcar tracks, and wet streets. Most of these hazards can cause a motorcycle to flip over.

Search terms: Motorcycle accidents, Wet road conditions, Wet skidding, Lane lines\*, Bridge surfaces, Road surfaces

HS-004 820 Fld. 3/3,5/3

AN INVESTIGATION INTO BICYCLE USAGE  
by Frank J. Vilardo, Marvin J. Nicol, Harold E. Heldreth  
National Safety Council, Chicago, Ill.  
Sep 1968 25p 4 refs  
Report no. 268

Gathers exposure data (how high school children ride their bicycles, age, sex, night time driving, games played) to be used with known accident statistics

and existing measures to build a comprehensive program for bicycle safety.

Search terms: Bicycles, Children\*, Accident prevention, Questionnaires\*, Safety research, Statistical analysis, Night driving, Driver behavior, Lighting equipment

AVAILABILITY: From corporate author

HS-004 983 Fld. 5/3,3/3,1/3

THE INCREASING PROBLEM OF MOTORCYCLE ACCIDENTS  
by Richard C. Dillihunt, George L. Maltby, Emerson H. Drake

Published in Journal of the American Medical Association v196 n12 p93-5 (20 Jun 1966)  
3 refs

There are more than a million motorcycles in the United States and an increase in injuries and fatalities connected with them. Experiences with 38 victims over a four-month period in a community hospital demonstrate the serious nature of this problem. Particularly severe head and extremity injuries are common, and teenagers are most frequently involved. The medical profession should make serious efforts to diminish this problem by cooperating with legislative groups and law enforcing agencies.

Search terms: Motorcycle accidents, Motorcycle safety, Fatalities, Injuries, Head injuries, Leg injuries, Arm injuries, Law enforcement\*, Legislation, Physicians\*, Community support, Adolescent drivers, Accident data

HS-005 033 Fld. 5/3,1/2,3/3

THE EFFECT OF COMPULSORY SAFETY HELMETS ON MOTORCYCLE ACCIDENT FATALITIES

by L. A. Foldvary, J. C. Lane

Published in Australian Road

Research v2 n1 p/-24 (Sep 1964) 24 refs

Analyzes the effect of safety helmets on fatalities, using before and after statistics. Compliance with the law has been close to 100%, and motorcycle fatalities for the first two years have been reduced by half. The helmets are economical, and their compulsory use is recommended to other jurisdictions. Figures are for the state of Victoria, Australia, and are compared with figures for other Australian states not requiring helmets.

Search terms: Motorcycle safety, Motorcycle accidents, Helmets, Fatalities, Safety laws, Accident data, Australia\*, Head injuries

HS-005 084 Fld. 5/3, 3/3

WHAT NOT TO DO TO YOUR SAFETY HELMET

by Gary B. Lovell

Published in Air Force Driver p5 (Mar 1969)

Decorative devices should not be added to motorcycle safety helmets. Since in a crash they might catch on something and break the victim's neck. They also may make the helmet fail to meet standards, some of which call for a smooth external surface.

Search terms: Helmets, Motorcycle safety, Motorcycle accidents, Safety standards, Neck injuries

HS-005 227 Fld. 3/3; 5/3

OFF THE JOB PLANNING: OTJ PROGRAMS FOR PLANT AND COMMUNITY. MOTORCYCLE SAFETY

by Robert G. Belknap

Published in National Safety News v98 n6 p60, 62 (Dec 1968)

Death or injury result in approximately 90% of motorcycle accidents. Suggestions are offered here to help companies who might be starting a motorcycle safety program for their employees. Safe driving principles for motorcycles are outlined.

### 3/3 Cyclists (Cont.)

HS-005-227 (Cont.)

Search terms: Safety programs; Motorcycle safety; Motorcycle accidents; Fatalities; Injuries; Defensive driving; Driver skills

HS-005 796 Fld. 3/3; 3/1; 1/3

### FATAL MOTORCYCLE ACCIDENTS

by J. Wallace Graham

Published in *Journal of Forensic Sciences* v14 n1 p79-86 (Jan 1969) 10 refs

This paper deals with the age, sex, and distribution of injuries in 352 motorcycle operator and/or passenger fatalities which occurred in Los Angeles County, California, from 1962 to 1966. The type of accident (collision or noncollision) and the extent of responsibility of the motorcycle operator is also noted. In addition an evaluation is made of the extent to which motorcycle operators having significant blood alcohol concentrations are responsible for accidents.

Search terms: Los Angeles County\*; Motorcycle accidents; Fatalities; Blood alcohol levels\*; Age factor in accidents; Sex factor in accidents; Accident rates; Passengers; Accident responsibility; Single vehicle accidents; Collisions (accidents); Driver intoxication; Head injuries; Spinal injuries; Arm injuries; Abdomen injuries; Leg injuries; Drinking drivers

HS-005 863 Fld. 1/3; 3/3

### CASUALTY ACCIDENTS INVOLVING BICYCLES—STATE OF VICTORIA, AUSTRALIA 1965 AND 1967

by Anne Raymond

Published in *Australian Road Research* v3 n7 p49-71 (Sep 1968) 8 refs

The number of bicycle accidents, severity of accident, age of rider, environmental conditions, involvement of drinking drivers, role of lights or lack of lights on bicycles,

and other accident factors were analyzed. Some 93% were found to be collisions with other vehicles; 96% were urban accidents. School-age children were 62% of the victims, accident risk was greater in darkness, the lights required on bicycles are insufficient, and many bicycle riders were found to be careless.

Search terms: Bicycle accidents\*; Fatalities; Injuries; Australia\*; Accident causes; Accident factors; Accident types; Drinking drivers; Lighting equipment; Defective vehicles; Urban accidents; Children; Accident risks; Careless driving; Night driving; Accident severity; Environmental factors; Age factor in accidents; Collisions (accidents)

HS-820 039 Fld. 5/3; 3/3

### HIGHWAY SAFETY PROGRAM MANUAL. VOLUME 3. MOTORCYCLE SAFETY

National Highway Safety Bureau, Washington, D.C.

Jan 1969 58p 11 refs

One of 17 volumes, two of which (vols. 12 and 13) are as yet unissued (see HS-820 036 to HS-820 050).

The complete manual supplements the Highway Safety Program Standards and presents additional information to assist State and local agencies to implement their highway safety programs. This volume provides guidelines for planning and operating a motorcycle safety program.

Search terms: Highway safety; Safety programs; State government; Local government\*; Motorcycle registration\*; Motorcycle safety; Motor scooters; Motorcycle accidents; Motorcycle characteristics; Federal-state relationships\*

AVAILABILITY: Federal Highway Administration, Washington, D.C. 20591, Attn: Records Management Branch. \$2.80

HS-006 346 Fld. 3/3

### PROTECTING YOUR FREEDOM OF THE ROAD

United States Suzuki Motor Corp.  
1965 68p

Prepared in cooperation with the Automobile Club of Southern California. Cover title is FREEDOM OF THE ROAD.

This manual introduces the new motorcycle owner to his bike. Driver skills needed for safe motorcycle riding are covered. Sections on championship and trail riding are included.

Search terms: Motorcycle safety; Motorcycle drivers; Defensive driving; Driver skills

AVAILABILITY: Corporate author \$1.00

HS-006 368 Fld. 5/3; 3/3

### THE SAFE WAY TO RIDE A MOTORBIKE

by Bill Christopher

Published in *Mechanix Illustrated* v64 n484 p67-8, 138-9 (Oct 1968)

2,200 motorbike riders were killed in 1967, the majority by automobile drivers who failed to yield the right of way. Most motorists claimed they did not see the cyclist. Four commonsense rules for two-wheel safety are offered.

Search terms: Accident prevention; Motorcycle safety; Motorcycle accidents; Driving conditions; Driver skills; Defensive driving

HS-006 382 Fld. 1/2; 3/3

### CYCLE INJURIES. A COMPARATIVE STUDY

by Ernest A. Pellegrino, Jr.

Published in *Wisconsin Medical Journal* v67 n9 p413-7 (Sep 1968) 8 refs

Presented at the annual meeting of the Wisconsin Orthopedic Society, Racine, Oct. 20, 1967.

A study was made of 440 motorcycle accident victims and 177 bicycle accident victims in regard to age, sex, month of the year, type of injury, and area of the body injured. Suggestions to reduce cycle injuries include wearing helmets and learning the special skills needed to control motorcycles.

### 3/3 Cyclists (Cont.)

HS-006-382 (Cont.)

Search terms: Motorcycle accidents; Bicycle accidents; Age factor in accidents; Sex factor in accidents; Injury factors; Motorcycle

safety; Helmets; Driver skills; Time factors; Head injuries; Arm injuries; Leg injuries; Wisconsin

HS-006 458 Fld. 3/3

#### THE HELMET: BASIC PROTECTION AGAINST HEAD INJURIES—MOTORCYCLING'S MOST FREQUENT AND MOST SERIOUS DANGER

by Anthony L. Ellison

Published in *Traffic Safety* v67 n1 p22-3,35-6 (Jan 1967)

Of the 1,350 motorcyclists killed on U.S. roads in 1965, 2/3 to 3/4 died of head injuries. The use of appropriately designed safety helmets results in a substantial reduction in fatalities. This article reviews programs relating to the adoption of safety helmets.

Search terms: Motorcycle accidents; Fatalities; Helmets; Safety standards; Head injuries; Injury protection

HS-006 521 Fld. 4/1; 3/3; 5/3

#### CONSTITUTIONALITY OF MANDATORY MOTORCYCLE HELMET LEGISLATION

by Bruce I. Kogan

Published in *Dickinson Law Review* v73 n1 p100-14 (Fall 1968) 90 refs

Traditional limits of police power allow the state to regulate only conduct which adversely affects others. Since failure to wear a motorcycle helmet affects only the individual motorcyclist, it is submitted that police powers cannot validly be invoked to enforce wearing helmets. It is suggested that attempts to enforce helmet wearing are unconstitutional. Motorcyclist protection could be accomplished by requiring the manufacturer to include with the motorcycle helmets for the rider and a passenger as seat belts are required in cars. This method would not infringe individual liberty and would provide a helmet, though it could not guarantee the wearing of the helmet.

Search terms: Helmets; Motorcycle safety; Motorcycle accidents; Head injuries; Constitutional law; Legal factors; Court decisions; State laws

### 3/4 DRIVER BEHAVIOR

HS-004 354 Fld. 3/4

A COMPARISON OF ACCELERATOR RELEASE AND BRAKE RESPONSE TIMES OF TEN HAND AND FOOT BRAKING METHODS ON A SIMULATOR UNDER THREE EXPERIMENTAL CONDITIONS

by Warren J. Huffman, Gerard R. Hummel

25 Oct 1967 20p

Presented at the Research Division, Higher Education Section, National Safety Congress, Chicago, Illinois

Compares the accelerator release and the brake response times of ten hand and foot braking methods on a simulator. Analysis of data revealed that the 3 methods using hand or foot poised on the brake were significantly faster than all the other methods; drivers had significantly faster response time than on non-drivers; males were faster than females.

Search terms: Driver behavior; Simulators; Human behavior; Accelerating; Braking; Males; Females; Handbrakes

AVAILABILITY: Corporate author

HS-004 355 Fld. 3/4

TASK CAPABILITY WHILE DRIVING

by S. W. Quenault

Road Research Lab., Crowthorne, Berks. (England)

1968 25p

Report no. RRL RPT.LR166

Forty-eight drivers convicted for careless driving and 48 drivers selected at random drove their cars (1) on the Laboratory track, (2) to the nearest town and back. As they drove they attempted a series of tasks—adding groups of numbers, giving the opposites to lists of words, etc. Results showed that there was no significant difference in task capability while driving between these two groups.

Within the groups, task capability was greatest on the track and least in the 30 miles/hr zone.

Search terms: Driving tasks; Driver behavior; Speed

AVAILABILITY: Corporate author

HS-004 366

SCIENTIFIC PROBLEMS AND INVESTIGATIONS ON TRAFFIC SAFETY QUESTIONS IN CONNECTION WITH CHANGE-OVER TO RIGHT-HAND TRAFFIC

by A. Englund  
Sweden. Commission for Right-Hand Traffic, Stockholm

Summarizes the scientific and investigative research of the following: The Learning Group; the Teaching Group; the Mass Media Group. Lists reports submitted to the Commission concerning the change-over to right-hand traffic in Sweden.

Search terms: Driver behavior, Driver education, Right-Hand traffic, Sweden, Traffic safety programs

AVAILABILITY: From corporate author

HS-004 387 Fld. 4/2

SEX

by William K. Leller

Published in Journal of Kentucky Medical Association v65 p879-80 (Sep 1967)

Editorial discusses the role physicians can play in automotive safety; includes setting an example by good driving habits and supporting better law enforcement, highway improvement, driver education, seat belt usage, improved driver licensing practices. Article's title is meant only to attract attention.

Search terms: Driver education, Driver license standards, Driver performance, Driving, Highway safety, Highway standards, Law (jurisprudence), Physicians, Safety campaigns, Seat belt usage

HS-004 411 Fld. 3/4

AN ANALYSIS OF WASHINGTON'S DRIVER IMPROVEMENT INTERVIEW: A STUDY IN PREDICTION AND CONTROL OF PROBLEM DRIVERS by Ronald A. Kleinknecht  
Washington. Dept. of Motor Vehicles, Olympia

Aug 1968 18p  
Report-017

A great deal of discrepancy was found among 8 driver improvement analysts in scoring and categorizing drivers on decision rules checklist. Most objective of four decision rule factors, accident potential, was found to discriminate between those drivers who got additional citations and those who did not. It was concluded in light of high failure rates and low predictor potential of interview that its usefulness was questionable.

Search terms: Driver performance studies, Driver characteristics, Driver improvement, Decision making, Traffic violations, Accident proneness, Washington, Interviews

AVAILABILITY: From corporate author

HS-004 412 Fld. 3/4

STRESS AND DRIVING PERFORMANCE: THE EFFECT OF DIVORCE by Lucille McMurray  
Washington. Dept. of Motor Vehicles, Olympia

Aug 1968 20p  
Report-016

Analysis of driving records of 410 persons who had better than average records. During the year of stress (six months before and six months after divorce) they had significantly higher than average accident and violation rates, except for male plaintiffs' accidents and female defendants' violations. Most common violations were speeding, failure to yield, prohibited

### 3/4 Driver Behavior (Cont.)

HS-004-412 (Cont.)

turns, and following too closely.

Search terms: Stress (psychology), Driver performance studies, Emotions, Divorce, Accident rates, Violations, Speed, Turning (direction change), Following distance, Right-of-way (traffic rules), Males, Females

AVAILABILITY: From corporate author

HS-810 010 Fld. 3/4

ADVANCING HUMAN ECOLOGY THROUGH PROGRESS IN SAFETY RESEARCH

by Robert Brenner  
National Highway Safety Bureau, Washington, D.C.

5 Aug 1968 12p

Presented at the American Society of Safety Engineers Annual Meeting, East Lansing, Michigan

Human reaction time cannot be improved to match the increasing speed and complexity of vehicles. Man is modifying his environment without being able to adjust to it. Auto travel will increase 40% in next 10 years; more safety designing will be needed.

Search terms: Human ecology, Motor vehicle design, Reaction time, Reactions (physiology), Safety design, Safety research, Speed

AVAILABILITY: NHSS

HS-004 480 Fld. 2/9,3/4

SOME ASPECTS AND PROBLEMS OF A HUMAN ENGINEERING STUDY OF ROAD FEATURES  
by J. T. Smith

Published in Australian Road Research Board v2 pt1 p552-66 (1964)

Describes a method of evaluating information displays (road signs) using the concept of limited channel capacity.

In a laboratory experiment, subjects were given a secondary tracking task while being presented at random times with road situations requiring one of five possible actions. The experiment showed that use of this method makes possible statistical evaluation of situations requiring varying amounts of time and concentration to reach a decision. This method permits evaluation of recognition and legibility of road signs and warning systems.

Search terms: Signs (displays), Human engineering factors, Driver performance studies, Driver behavior, Laboratory experiments, Tracking (position), Steering (driving), Driving conditions, Warning systems

HS-004 484 Fld. 3/4

WHAT YOU SHOULD KNOW ABOUT... HANDLING  
Anonymous

Published in Air Force Driver p2-5 (Jan 1969)

Discusses problems in steering and handling a car, especially those caused by suspension and tires.

Search terms: Driver skills, Driving tasks, Steering (driving), Suspension systems (vehicles), Tires

HS-004 544 Fld. 3/4

DANGEROUS YOUNG DRIVERS  
by Donald C. Peiz,  
Stanley H. Schuman  
Michigan Univ., Ann Arbor.  
Highway Safety Research Inst.

Published in HSRI Research n2 p1-8 (Jun 1968)

Cross-section sample of licensed male drivers 16-24 was compared with group of safe drivers. Young male

drivers with repeated accident or violation patterns drove more miles, were under more social pressure and tension, used driving as an outlet, often came from working class homes, and were less successful in school.

Search terms: Age factor in accidents, Age factor in driving, Adolescent drivers, Young adult drivers\*, Sociological aspects, Psychological factors

HS-004 588 Fld. 3/4,1/3

STUDY OF EEG OF BUS DRIVERS WHILE DRIVING AND AT REST  
by Kazuo Suenaga, Kenji Goto  
Hidefumi Suenaga

Published in Kurume Medical Journal v14 n2 p43-8 (1967)

Two groups of bus drivers (accident and non-accident) were given electroencephalograms while driving and while at rest. The tests revealed that most cases with dominant alpha waves (indicating low conscious level) belong to the group with accidents.

Search terms: Electroencephalography\*, Bus drivers\*, Accident proneness, Driver performance studies, Accidents

HS-004 590 Fld. 3/7,3/4

STREET FITNESS AFTER ANAESTHESIA IN OUT-PATIENTS  
by A. Doenicke

Published in Acta Anaesthesiologica Scandinavica suppl 17 p95-7 (1965)

Any post-anesthetic patient must be looked upon as a definite traffic hazard. Results are reported from six kinds of tests given to twelve volunteers who had received various anesthetics. Subjects were not sufficiently alert and awake to avoid traffic accidents.

Search terms: Driver physical fitness, Traffic

### 3/4 Driver Behavior (Cont.)

HS-004-590 (Cont.)

accidents, Anesthetics\*,  
Drugs, Accident risks

HS-004 638 Fld. 3/4

AUTO INSURANCE INDUSTRY  
ANNUAL TRAFFIC SAFETY  
RESEARCH SYMPOSIUM  
Allstate Insurance Co.,  
Northbrook, Ill.

Published in Analogy p1-32  
(Spr 1968)

Held 19-21 Mar 1968, North-  
brook, Ill. Cover title:  
A Special Report on the  
Symposium for Traffic Safety  
Research. (Includes HS-004  
639 to HS-004 647) (See,  
also, HS-810 050)

Educators, sociologists,  
engineers, insurance execu-  
tives met to analyze driver  
behavior in an effort to  
make driving safer. The  
objective of this three day  
conference was to document  
and catalog all past re-  
search on driver behavior  
and to examine the knowledge  
gaps. This report is a  
summary version of the  
proceedings.

Search terms: Driver  
behavior, Research,  
Traffic safety, Conferences\*

HS-004 639 Fld. 3/4

SECOND SYMPOSIUM ON A  
SUPERPROBLEM  
by Sheldon Mix

Published in Analogy  
p4-7 (Spr 1968) (HS-004  
638)

Summarizes the 2nd Annual  
Traffic Safety Research  
Symposium, held at North-  
brook, Ill., Mar 19-21, 1968.  
Reports and panel discussions  
on the theme "Driver Be-  
havior--Cause and Effect"  
are briefly described.

Search terms: Traffic  
safety, Driver behavior

HS-004 640 Fld. 3/4

WHY DRIVERS BEHAVE AS  
THEY DO?  
by James O'Day  
Michigan Univ., Ann Arbor.  
Highway Safety Research  
Inst.

Published in Analogy  
p11-2 (Spr 1968) (HS-004  
638)

Suggests that the driver  
can be fitted into a sys-  
tems analysis program that  
will bring him into safer  
harmony with the machine  
and the road. Emphasizes  
a systematic rather than  
a haphazard attack on  
driver problems.

Search terms: Systems  
analysis, Traffic safety,  
Driver behavior, Man  
machine systems

HS-004 641 Fld. 3/4

WHO ARE THE DANGEROUS  
DRIVERS?  
by Donald C. Pelz

Published in Analogy p13-5  
(Spr 1968) (HS-004 638)

In the number and severity  
of auto accidents the  
accent is on youth (fata-  
lity rate is twice as high  
for young males as for men  
in their 40's). Ways to  
make driving years, 16-25,  
safer for everyone are  
considered.

Search terms: Driver  
behavior, Automobile  
accidents, Fatalities,  
Traffic safety, Adolescent  
drivers, Young adult  
drivers\*

HS-004 642 Fld. 3/4

THE DRIVER IN DANGER  
by George Briggs

Published in Analogy p16-7  
(Spr 1968) (HS-004 638)

A general theory of human  
decision making exists.  
The first research task in  
using this theory should  
be to exhibit its relevance

to driving decisions. Some  
drivers make decisions  
furthering their safety;  
some decide to take risks;  
what is the difference?

Search terms: Accident  
prevention, Decision  
making, Driver behavior,  
Safety education, Traffic  
safety

HS-004 643 Fld. 3/4

THE DRINKING DRIVER  
by Selden D. Bacon  
Rutgers--The State Univ.,  
New Brunswick, N.J. Center  
of Alcohol Studies

Published in Analogy p18-9  
(Spr 1968) (HS-004 638)

Suggests that the social  
scientist has done little  
about the problem of traffic  
accidents and alcohol. The  
science now possesses orien-  
tation, theory, and method-  
ology needed to study the  
customs, & pathologic  
aspects of the drinking-  
driving problem.

Search terms: Drinking  
drivers, Sociological  
aspects, Alcohol, Traffic  
accidents

HS-004 644 Fld. 3/4

WE DRIVE AS WE LIVE  
by Ward Edwards

Published in Analogy p20-2  
(Spr 1968) (HS-004 638)

Discusses research in 3  
areas: man's limitation  
as a detector of traffic  
cues; easier ways of pick-  
ing out important traffic  
clues; the role of training  
in helping man process  
traffic information more  
efficiently.

Search terms: Accident  
prevention, Decision  
making\*, Driver behavior,  
Safety education, Traffic  
safety

HS-004 645 Fld. 3/4

LEGAL CURBS ON DRIVERS  
by Roger C. Cramton

### 3/4 Driver Behavior (Cont.)

HS-004-645 (Cont.)

Published in Analogy p23-5  
(Spr 1968) (HS-004 638)

Suggests that human behavior can be influenced by legal sanctions on the driver. Crucial questions are: who can be influenced; what are the costs and side effects; what other modes of compliance are available?

Search terms: Legislation,  
Traffic courts, Drinking  
drivers, Enforcement,  
Driver license revocation

HS-004 646 Fld. 3/4

THE METAMORPHOSIS:  
TURNING FACTS INTO FACTORS  
by Ronald G. Havelock

Published in Analogy p26-9  
(Spr 1968) (HS-004 638)

Contrasts natural process of knowledge dissemination and utilization with the crisis approach. Projects a 3rd approach as "the process of planned change", i.e., speed up utilization while still in natural process.

Search terms: Research,  
Traffic safety

HS-004 648 Fld. 3/4

EFFECTS OF PROLONGED DRIVING  
UPON DRIVING SKILL AND  
PERFORMANCE OF A SUBSIDIARY  
TASK

by I. D. Brown,  
A. H. Tickner,  
D. C. V. Simmonds

Published in Industrial  
Medicine and Surgery v35  
p760-5 (Sep 1966)

Sixteen male subjects were tested. The subsidiary task was "random generating." Upon hearing a tone, subject was to name a month and attempt to make the sequence of months named as random as possible. Scores are given

for performance on the subsidiary task, driving performance, effect of random generating on driving performance, and automatization and reserve capacity. The main finding is that prolonged driving had very little effect upon driving performance or ability to perform the subsidiary task.

Search terms: Driving  
tasks, Driver skills,  
Driver fatigue

HS-004 647 Fld. 3/4

SUMMING UP THE SYMPOSIUM  
by Hugh Miser

Published in Analogy p30-1  
(Spr 1968) (HS-004 638)

Reiterates the goals of the Symposium: to learn more about driver behavior-- cause and effect; to match theories of traffic safety with the real world of man-road-and-machine.

Search terms: Traffic  
safety, Driver behavior

HS-004 649 Fld. 3/4

MEASUREMENT OF CONTROL  
SKILLS, VIGILANCE, AND  
PERFORMANCE ON A SUBSIDIARY  
TASK DURING 12 HOURS OF  
CAR DRIVING  
by I. D. Brown,  
D. C. V. Simmonds,  
A. H. Tickner

Published in Ergonomics,  
v10 n6 p665-73 (Nov 1967)  
15 refs

Eight drivers were tested under continuous driving conditions and under control conditions in which they performed their normal work between tests. Vigilance improved significantly during prolonged driving, and differences in skills between conditions were slight. Continuous 12 hour period of driving need not affect either perceptual or motor skills adversely. Test was made in city traffic.

Search terms: Driver  
skills, Driving conditions,  
Driver performance studies,  
Driver fatigue

HS-004 675 Fld. 5/20,3/4

FISH-TAIL TERROR. RESEARCH  
REPORT ON BETTER TOWING  
by Paul Foght

Published in Woodall's Trailer  
Travel v34 n5 p58-9, 99  
(May 1968)

Describes a test to determine causes of fishtailing (yawing) in trailers and what corrective action drivers should take. The causes are: nature of auto design, improper weight distribution in trailer, improper wheel alignment and faulty suspension in auto or trailer. Best driving techniques in yawing are to brake the trailer or else increase speed of tow car.

Search terms: Yaw, Trailers,  
Driver skills, Speed, Motor  
vehicle design, Wheel alignment,  
Suspension systems  
(vehicles), Vehicle weight,  
Braking techniques

HS-810 050 Fld. 3/4,2/0

[HIGHWAY SAFETY]  
by William Haddon, Jr.  
National Highway Safety  
Bureau, Washington, D.C.

19 Mar 1968 9p  
Presented at the Automobile Insurance Industry  
Second Annual Traffic  
Safety Research Symposium,  
Northbrook, Ill.  
(See, also, HS-004 638)

Problems of highway safety (alcoholism, teenagers, the elderly) should not be considered as matters in isolation from other human problems, but as having close relationships with other contemporary issues so they can be dealt with in a much broader context.

Search terms: Conferences\*,  
Highway safety, Social  
reforms\*, Community support

AVAILABILITY: From NHSB

### 3/4 Driver Behavior (Cont.)

HS-004 683 Fld. 1/3,3/4,3/1

RESEARCH IN TRAFFIC ACCIDENT PREVENTION: AN OVERVIEW OF RESEARCH SUPPORTED BY THE PUBLIC HEALTH SERVICE, U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE  
by Leon G. Goldstein

Published in Traffic Safety  
v11 n2 p50-6 (Jun 1967)

Outlines research being carried on in crash injuries, accident studies, driver behavior, drinking drivers and pedestrians, seat belt usage, simulation, driver improvement and education, traffic flow, effect of drugs on driving behavior, pedestrian accidents, and effects of carbon monoxide on driving behavior.

Search terms: Accident research, Accident prevention, Injury research, Crash research, Driver behavior, Drinking drivers, Alcoholic beverages, Simulation, Pedestrian behavior, Driver education, Driver improvement, Traffic flow, Pedestrian accidents, Drugs, Carbon monoxide, Seat belt usage\*, Seat belts, Public Health Service\*

HS-004 756 Fld. 2/9,3/4

DAYTIME HEADLIGHTS AND POSITION ON THE HIGHWAY  
by Merrill J. Allen, Jerry Strickland, Brian Ward, Art Siegel

Published in American Journal of Optometry and Archives of Optometry Academy of Optometry  
v46 n1 p33-36 (Jan 1969)  
Presented at the Annual Meeting, American Academy of Optometry, 14 Dec 1964, Columbus, Ohio

A method of sampling the effects of using daytime headlights against oncoming traffic through photography is presented. It is concluded that driving

with headlights "on" in the daytime on sunny days produces an apparent improvement in the position of oncoming traffic in its own lane.

Search terms: Daylight driving\*, Time factors, Weaving traffic, Headlights, Driver performance, Accident prevention, Highway Safety, Photography, Visibility

HS-004 821 Fld. 3/4

A PRELIMINARY INVESTIGATION INTO A PHYSIOLOGICAL ASSESSMENT OF DRIVING STRESS  
by T. J. Hunt, B. Dix, P. I. May  
London. Metropolitan Police (England). Accident Research Unit and National Inst. for Medical Research, London (England)

Jul 1968 82p 10 refs

Some driving conditions consistently affect heart-rate and amplitude patterns. This study may provide a basis for assessing the "stress" of the traffic environment on drivers based upon driving experience. Further investigation may reveal a relationship between accidents and heart-rate and amplitude patterns.

Search terms: Accident risks, Driver characteristics, Stress (physiology), Heart rate\*, Cardiovascular system, Driving conditions

AVAILABILITY: From corporate author

HS-004 822 Fld. 3/4,1/3

ACCIDENTS AND HUMAN PERFORMANCE  
by Gordon H. Robinson  
Wisconsin Univ., Madison. Industrial Engineering Div.  
9-12 Sep 1968 6p 12 refs  
Report no. SAE-680555  
SAE National Combined Farm Construction and Industrial Machinery, Powerplant, and Transportation Meetings, Milwaukee, Wis.

Accidents and their causation

in man-machine control are defined using the automobile and driver as an example. The complex tasks performed by the automobile driver are delineated and are considered crucial to the system performance.

Search terms: Man machine systems, Driving tasks, Human factors engineering, Accident factors, Steering (driving), Driver performance

AVAILABILITY: From SAE

HS-004 823 Fld. 3/4,3/6

THE RELATION OF LICENSING TEST SCORES TO SUBSEQUENT DRIVER PERFORMANCE  
by Douglas J. McRae  
North Carolina Univ., Chapel Hill. L. L. Thurstone Psychometric Lab.

Aug 1968 36p  
Grant PHS-MH-8258  
Report no. 67

Sponsored by the Highway Safety Research Center, University of North Carolina

Relates two sets of variables: drivers' licensing test scores, and subsequent driving performance as measured by accidents and violations. Concludes the "driver skills" class of variables can in conjunction with other classes lead to better prediction of driver performance.

Search terms: Multivariate analysis\*, Statistical analysis, Driver performance, Accident rates, Violations, Forecasting, Driver license examination

AVAILABILITY: From corporate author

HS-004 852 Fld. 5/13,3/4

THE INFLUENCE OF SOME SIDE MIRROR PARAMETERS ON THE DECISIONS OF DRIVERS  
by Pieter L. Walraven, John A. Michon  
Rijksverdedigingsorganisatie TNO, Soesterberg (Netherlands). Inst. for perception

### 3/4 Driver Behavior (Cont.)

HS-004-852 (Cont.)

13-17 Jan 1969 9p 9 refs  
Report no. SAE-690270

Presented at International  
Automotive Engineering  
Congress, Detroit, Mich.  
Research carried out partly  
under contract with  
Donnelly Mirrors, Inc.,  
Holland, Mich.

An experiment is described in  
which a driver must decide  
whether he can overtake a car  
in front of him, while a car  
approaches behind him. Convex  
mirrors affected decision  
times significantly for inex-  
perienced subjects in early  
phases of experiment. Several  
speeds and different curvatures  
of the side mirrors were  
used.

Search terms: Convex mirrors\*,  
Rearview mirrors, Reaction  
time, Visibility, Decision  
making\*, Driver behavior,  
Overtaking (driving),  
Speed, Gap acceptance\*

AVAILABILITY: From SAE

HS-004 871 Fld. 2/9,3/4

URBAN INTERSECTION STUDY.  
Vol. 1, SUMMARY REPORT  
by Kenneth R. Laughrey,  
Edwin A. Kidd  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 66p 14 refs  
Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-1;  
PB-180 120

Final technical report.

A computer simulation model  
was formulated to investigate  
traffic movement through  
urban intersections. Driver's  
perceptual, decision making,  
and response processes were  
considered crucial factors,  
but vehicle characteristics  
and environmental conditions  
were also studied. Experiments  
included specific laboratory  
and full-scale studies as  
well as actual traffic obser-  
vation. A literature survey  
was made to locate related  
studies.

Search terms: Computerized  
simulation, Traffic  
simulation, Intersections,  
Driver behavior, Laboratory  
tests, Environmental  
factors, Traffic data  
analysis, Driver performance,  
Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 120

HS-004 872 Fld. 2/9,3/4

URBAN INTERSECTION STUDY.  
VOL. 2, A COMPUTER SIMULATION  
MODEL OF DRIVER BEHAVIOR AT  
INTERSECTIONS.  
by Theodore E. Anderson,  
Edwin A. Kidd,  
Kenneth R. Laughrey  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 269p 14 refs  
Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-2;  
PB-180 121  
Final technical report.

A computer model was formulated  
to simulate traffic approach-  
ing, passing through, and  
leaving an intersection con-  
trolled by either a two-way  
stop sign or a four-way  
traffic light. The model was  
limited to two-lane roads,  
35-50mph speeds, no pedestrians,  
no passing, daylight, and no  
obstructions to the driver's  
view. Driver, vehicle, and  
environmental characteristics  
were considered, with primary  
emphasis on the driver. Model  
is not considered valid in  
its present state but results  
are encouraging, and valida-  
tion of the model or parts of  
it may now begin. A valid  
model of driver behavior and  
vehicle performance could be  
valuable in planning highways,  
training drivers, and establish-  
ing traffic regulations.

Search terms: Computerized  
simulation, Traffic simula-  
tion, Intersections, Driver  
behavior, Traffic signals,  
Stop signs\*, Two lane high-  
ways, Speed, Pedestrians,  
Passing (driving),  
Visibility, Motor vehicle  
characteristics, Environmental  
factors, Highway planning,  
Highway design, Driver  
education, Traffic regula-  
tions\*, Traffic data  
analysis, Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 121

HS-004 873 Fld. 2/9,3/4

URBAN INTERSECTION STUDY.  
VOL. 3, EXPLORATORY STUDY  
OF INDIVIDUAL DRIVER BEHAVIOR  
by Theodore E. Anderson,  
Kenneth R. Laughrey,  
David E. Maurer  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 61p  
Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-3;  
PB-180 122  
Final technical report.

To provide data for a computer  
model to simulate traffic  
approaching an intersection,  
a full scale study of velocity  
patterns and scanning was made.  
Control variables used were  
traffic light, two-way stop  
sign with stop, and two-way  
stop sign with right-of-way.  
Speed variables were approxi-  
mately 35mph and 50mph.  
Maneuvers used were straight  
through, left turn, and right  
turn. Four male subjects with  
considerable driving experience  
drove the test course twice  
each, once at each speed,  
while data were recorded by  
oscillograph and camera.  
Results were time histories  
of velocity, acceleration,  
accelerator deflection, and  
brake deflection. Study  
showed that useful and  
accurate simulation model  
of the automobile driver  
can be attained. Results are  
presented in table and graph  
form.

Search terms: Intersections,  
Traffic signals, Stop signs\*,  
Computerized simulation,  
Deceleration patterns,  
Driver performance, Driver  
behavior, Right-of-way  
(traffic rules)\*, Turning  
right, Turning left,  
Photography, Speed,  
Acceleration patterns,  
Braking, Driving simulation,  
Oscillographs\*, Traffic  
data analysis, Urban  
intersections\*

AVAILABILITY: From CFSTI as  
PB-180 122

### 3/4 Driver Behavior (Cont.)

HS-004 874 Fld. 2/9,3/4

URBAN INTERSECTION STUDY.  
VOL. 4, HEADWAY CHANGE  
DETECTION DURING CAR-FOLLOWING  
by David Edwin Maurer  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 66p 34 refs  
Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-4;  
PB-180 123  
Final technical report.

Describes laboratory simulation with 35 volunteers to study driver detection of headway (defined as the distance between the front of a following-car and the rear of a lead-car) under various conditions. Four independent variables were investigated: velocity-headway combination at four levels, magnitude of acceleration or deceleration at three levels, acceleration vs. deceleration, and duration of steady-state time. Resulting data were tabulated, and analysis revealed a triple interaction between magnitude of acceleration, direction of acceleration, and velocity-headway combination. Background information is included giving results of previous studies in motion detection.

Search terms: Intersections, Driver performance, Following distance, Traffic simulation, Speed, Acceleration (physics), Deceleration, Laboratory tests, Traffic data analysis, Gap acceptance\*, Driver behavior, Motion perception\*, Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 123

HS-004 876 Fld. 2/9,3/4

URBAN INTERSECTION STUDY.  
VOL. 6, THE DRIVER IN A  
REAL LIFE ENVIRONMENT  
by Richard A. Raub  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 164p

Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-6;  
PB-180 125

Final technical report.

A study to gether and measure data on vehicle movement and interaction from which driver behavior patterns could be inferred and used for both input and validation of an urban intersection model. Two intersections in New York State were observed over a period of two years by two different data collection procedures. Photographic observation was done from a light plane. This method was found to be useful in low traffic volume surveys where quick response was required. It provided data on gap acceptance, driver response to stop signs vs. flashing red or yellow lights, and speed approaching and passing through an intersection. Electronic observation was done with switches installed on the road surface and connected to recording equipment installed in a delivery van. Data were compared on a controlled and an uncontrolled road with two configurations of two-way stop and on a four-way stop. The two groups of data from the two intersections studied under the two different collection procedures are also compared.

Search terms: Intersections, Data acquisition, Driver behavior, Stop signs\*, Deceleration patterns, Aerial photography\*, Gap acceptance\*, Speed, Electronic devices, Traffic data analysis, Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 125

HS-004 877 Fld. 2/9,3/4,4/5

URBAN INTERSECTION STUDY.  
VOL. 7, RESOURCES ON DRIVER  
BEHAVIOR: ABSTRACTS  
by Richard A. Raub, ed.  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 100p  
Contract CPR-11-2856

Report no. CAL-VJ-2120-V-7;  
PB-180 126

Final technical report.

An annotated bibliography of over 100 publications on traffic and driver behavior, oriented to intersection studies. Entries are arranged in four categories: Traffic flow and gap acceptance, Information processing and driving behavior, Simulation, Miscellaneous.

Search terms: Intersections, Traffic data analysis, Bibliographies, Driver behavior, Traffic flow, Gap acceptance\*, Data processing, Computerized simulation, Simulation, Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 126

HS-004 878 Fld. 3/4,5/1

SUBJECTIVE ASPECTS OF BRAKING  
by R. T. Spurr

Published in Automobile  
Engineer v59 n2 p58-61  
(Feb 1969)

The behavior and braking performance of 15 drivers is examined. Factors determining what deceleration a driver will use in given circumstances have been studied. The drivers' ability to estimate speed and distance has been analyzed. Drivers who braked hard left smaller gaps. Stopping time depended more on visual than manual reaction time.

Search terms: Braking techniques, Driver behavior, Driver performance studies, Deceleration, Speed, Stopping distance, Braking distance, Reaction time, Following distance, Gap acceptance\*

HS-004 911 Fld. 5/18,3/4

STANDARDS FOR SAFE HANDLING  
CHARACTERISTICS OF AUTOMOBILES  
by W. F. Milliken, Jr.,  
F. Dell'Amico  
Cornell Aeronautical Lab.,  
Buffalo, N.Y.

### 3/4 Driver Behavior (Cont.)

HS-004-911 (Cont.)

3-4 Jul 1968 63p 38 refs  
Prepared for presentation  
at the Joint Symposium on  
Vehicle and Road Design  
For Safety, College of  
Aeronautics, Cranfield,  
England

Reviews fundamentals in the  
handling qualities (guidance  
& control) of motor vehicles.  
Discusses contribution of  
the vehicle to safety. Notes  
the lack of reliable statisti-  
cally significant data that  
relates handling to accidents  
and injury. Outlines a Task  
Performance Methodology as  
an approach to devising safe  
handling standards.

Search terms: Motor vehicle  
handling, Driver-vehicle  
interface, Driver skills,  
Driving tasks, Performance  
characteristics, Vehicle  
stability, Motor vehicle  
control, Accident causes

AVAILABILITY: From corporate  
author

HS-004 920 Fld. 1/3,3/4,5/4,  
4/7

CENTER FOR ACCIDENT PREVENTION  
Dunlap and Associates, Inc.,  
Darien, Conn.

Nov 1965 46p  
Report no. PP-65-94

Accidents stem from human  
error, the function of the  
highway, and the design of  
the automobile. The goals  
of Dunlap's Center for  
Accident Prevention are de-  
scribed and its systems-  
oriented approach to accident  
prevention discussed. Acci-  
dents are viewed as human  
errors to be designed out of  
a complex man-machine system.  
In this connection dynamics  
of vehicle steering behavior  
and following behavior have  
been studied, together with  
risk-taking behavior and  
cost-effectiveness of accident  
research and prevention  
programs.

Search terms: Accident

causes, Automobile design,  
Highway design, Accident  
prevention, Man machine  
systems, Steering dynamics,  
Benefit cost analysis\*,  
Following distance,  
Driver behavior, Reckless  
driving, Accident research

AVAILABILITY: From corporate  
author

HS-004 944 Fld. 3/1,3/4,1/3

ALCOHOLISM, MENTAL ILLNESS,  
AND STRESS IN 96 DRIVERS  
CAUSING FATAL ACCIDENTS  
by Melvin L. Selzer

Published in Behavioral  
Science v14 p1-10 (Jan 1969)  
16 refs

96 drivers, each of whom  
caused a fatal accident,  
were compared with a like  
number of control drivers..  
Information was collected  
regarding chronic alcoholism,  
emotional illness, personal  
and social stress, acute  
preaccident disturbances,  
social class, and prior driv-  
ing behavior.

Search terms: Fatalities,  
Accident factors, Drink-  
ing drivers, Mental illness,  
Driver behavior, Socio-  
economic data, Alcoholism,  
Personality, Blood alcohol  
levels\*, Age factor in  
accidents, Time factor in  
accidents, Suicide\*,  
Depression\*, Stress  
(psychology)

HS-004 945 Fld. 3/4,5/4,3/1

A BACKSEAT DRIVERS GUIDE: OR  
WOMEN'S ROLE AND RESPONSIBILITY  
IN THE TRAFFIC MORTALITY  
PROBLEM

by R. K. Y. Dusingberre

1969 148p

Published by Magee  
Publishing Co., Bordentown,  
N. J.

Discusses the highway safety  
problem, in particular the  
role of high-speed turnpikes,  
speeding trucks, the need  
for speed governors, the  
problems of brakes, drink-  
ing, young drivers, speeding  
ambulances and their acci-  
dent involvement, law

enforcement in traffic  
cases. Includes discussion  
of the public's attitudes  
towards these problems.

Search terms: Highway  
safety, High speed, Trucks,  
Law enforcement\*, Ambulances,  
Brakes (motion arresters),  
Drinking drivers, Driver  
intoxication, Traffic courts,  
Ambulances, Speed control,  
Adolescent drivers, Young  
adult drivers, Age factor  
in accidents, Attitudes,  
Community support, Toll  
roads, Accident causes,  
Sex factor in driving,  
Speed regulators\*

HS-004 965 Fld. 2/9,3/4

AN INVESTIGATION OF DRIVER-  
AIDED CAR FOLLOWING  
by William B. Montano,  
Robert E. Fenton  
Ohio State Univ., Columbus.  
Engineering Experiment  
Station

Nov 1967 128p 18 refs  
Report no. EES-276A-2

A driver's inability to detect  
small relative velocities and  
small errors in headway is a  
primary reason for his poor  
car-following performance.  
This can be greatly improved  
if he is given information  
concerning headway and  
relative velocity of a lead  
car. A control stick with  
a built-in kinesthetic  
tactile display was tested  
in a car-following situation  
and performances compared  
to those when no aid was  
used. Sizable reductions in  
velocity variance and head-  
way variance were obtained  
when aid was used.

Search terms: Automobile  
simulators, Velocity,  
Following distance,  
Traffic flow patterns,  
Driver performance, Field  
tests, Control sticks\*

AVAILABILITY: From  
corporate author

HS-004 968 Fld. 3/4,3/1,3/7

THE AVERAGE MAN--AND THE  
NON-AVERAGE DRIVER!  
by Ben Berkey

### 3/4 Driver Behavior (Cont.)

HS-004-968 (Cont.)

Published in California  
Highway Patrolman v32 n11  
p7, 16, 32, 36 (Jan 1969)

Attributes the highway  
safety problem to reckless  
drivers, who violate traffic  
laws, drive irrationally,  
drive while drunk or drugged,  
and use cars to gain a feel-  
ing of power.

Search terms: Reckless  
driving, Careless driving,  
Drinking drivers, Drugs,  
Psychological factors,  
Driver behavior, Driver  
physical fitness, Traffic  
laws, Highway safety,  
Wrong way\*

HS-004 969 Fld. 3/4,2/11,1/3

CREDIT RATINGS AS A PREDICTOR  
OF DRIVING BEHAVIOR AND  
IMPROVEMENT

by Alfred Crancer, Jr.,  
Lucille McMurray  
Washington. Dept. of  
Motor Vehicles, Olympia

May 1968. 7p  
Report no. 010

A comparison was made of the  
driving records of 36 persons  
with good credit ratings and  
23 persons with bad credit  
ratings in order to deter-  
mine the relationship between  
economic and driving behavior.  
Those persons with poor credit  
ratings had a 280% higher  
accident rate and 137% higher  
violation rate than those  
with good credit ratings.  
Warning letters to poor credit  
risks were less effective  
than warnings to good credit  
risks. Drivers with good  
credit are more likely to  
improve.

Search terms: Driver  
records, Accident rates,  
Washington\*, Driver  
behavior, Traffic violations,  
Driver improvement,  
Economic factors, Credit  
ratings\*

AVAILABILITY: From

corporate author

HS-004 970 Fld. 3/4

DRIVING RECORDS OF PERSONS  
HOSPITALIZED FOR SUICIDE  
GESTURES

by Alfred Crancer, Jr.,  
Dennis L. Quiring  
Washington. Dept. of Motor  
Vehicles, Olympia

Jul 1968 12p  
Report no. 014

The records of 438 drivers  
who attempted suicide were  
compared with 687,228 driving  
records of other persons.  
The suicidal group had an  
accident rate 81% higher  
and a violation rate 146%  
higher than comparable driv-  
ers. They also had a  
larger proportion of drunken  
and reckless driving, hit  
and run cases, injury acci-  
dents, and driving on sus-  
pended license. They had  
fewer violations for speed-  
ing, failure to stop,  
improper turns, and disobey-  
ing road signs.

Search terms: Washington\*,  
Suicide\*, Reckless driving,  
Accident rates, Driver  
records, Traffic violations,  
Driver intoxication, Drink-  
ing drivers, Injury factors,  
Hit and run accidents,  
Driver license suspension,  
Driver behavior, Mental  
illness

AVAILABILITY: From corporate  
author

HS-004 986 Fld. 5/4,1/3,3/4

CONSIDERATIONS IN DETERMINING  
VEHICLE HANDLING REQUIREMENTS

by Walter Bergman  
Ford Motor Co., Dearborn,  
Mich.

13-17 Jan 1969 17p 17 refs  
Report no. SAE-690234

Presented at International  
Automotive Engineering  
Congress, Detroit, Mich.

Discusses the facets of  
vehicle handling and relates  
them to real life conditions.  
Includes description of  
driver-vehicle handling  
qualities in terms of

safety and performance. Ana-  
lyzes the mechanics of acci-  
dents. Reviews and compares  
subjective evaluation, per-  
formance task testing, and  
response measurement methods  
for developing desirable  
vehicle handling characteris-  
tics. New test methods for  
measuring effects of braking  
and acceleration in cornering  
are described.

Search terms: Driver  
performance, Performance  
tests, Motor vehicle  
handling, Accident analy-  
sis, Braking techniques,  
Acceleration (physics),  
Cornering, Driver-vehicle  
interface, Motor vehicle  
safety, Vehicle stability

AVAILABILITY: From SAE

HS-005 021 Fld. 2/9,3/4

EFFECT OF LANE-CLOSURE  
SIGNALS UPON DRIVER DECISION  
MAKING AND TRAFFIC FLOW  
by Kenneth Perchonok,  
Paul M. Hurst

Published in Journal of  
Applied Psychology v52 n5  
p410-3 (1968) 7 refs

A decision-theoretic model  
was applied to driver  
behavior on an urban express-  
way. The model permits  
inferential measurement of  
responsiveness versus con-  
fusion and of risk-taking  
predisposition. These  
variables, in addition to  
risk taking and hazard, were  
measured in a field study of  
forced merging from a blocked  
lane. Results were compared  
under two methods of lane  
closure: signal closure,  
which provides earlier warn-  
ing, and conventional closure.  
The signal closure method was  
superior in lower hazard,  
greater responsiveness, and  
traffic flow characteristics.

Search terms: Driver  
behavior, Traffic control  
devices, Traffic lanes,  
Reaction time, Hazards,  
Traffic flow, Merging  
traffic, Urban highways,  
Traffic signals, Decision  
theory\*, Driver behavior

### 3/4 Driver Behavior (Cont.)

HS-005 024 Fld. 3/4

THE OVERTAKING DRIVER  
by A. Crawford

Published in Ergonomics v6  
n2 p153-70 (Apr 1963)

An experiment to determine the relation between the interval in approaching traffic which a driver judges to be safe for overtaking and his actual overtaking performance is described. It is concluded that drivers should not attempt a maneuver about which they have any doubt because of the smaller safety margin and longer time to act. Drivers should be aware of the limitations of their vehicles, especially at higher speed when judgments are found to be less realistic.

Search terms: Overtaking (driving), Driver performance studies, Driver behavior, Reaction time, High speed, Motor vehicle handling

HS-005 025 Fld. 3/5,3/4

TV MIRRORS TRUE DRIVING PERFORMANCE  
by Alfred C. Finch

Published in Traffic Safety v68 n12 p10-2,34  
(Dec 1968)

Closed circuit television (CCTV) can be used to improve driving performance; to aid new drivers and problem drivers; for mass retraining and upgrading of all drivers. Experiments designed to observe the driver in a moving vehicle under traffic conditions utilized both Sony and Panasonic systems.

Search terms: Television systems, Closed circuit television\*, Driver education, Driving tasks, Driver improvement, Driver behavior, Driving conditions

HS-005 044 Fld. 5/18,5/22,3/4

EVEN AT LOW SPEEDS, THE DRIVER  
DETECTS CHANGES IN CAR  
HANDLING

by Thomas J. Hildebrandt,  
Arthur R. Poskocil

Published in SAE Journal v77  
n1 p56-7 (Jan 1969)-

Low speed tests (35 mph) disprove a common belief that car handling differences can be detected only at high speeds (60-80 mph). Three tire pressure combinations were used to detect vehicle response characteristics. Lane changing performance was tested at various speeds.

Search terms: Driver performance tests, Speed studies, Motor vehicle handling, Inflation pressure, Turning (direction change), Driver-vehicle interface

HS-005 069 Fld 3/4, 3/9

THE MENTALLY ILL AS MOTOR  
VEHICLE OPERATORS

by Alfred Crancer, Jr., Dennis L. Quiring

Washington. Dept. of Motor Vehicles,  
Olympia

Jun 1968 15p

Report no. 013

Driving records of 271 persons hospitalized for mental illness were compared with 687,228 driving records of others. Three groups of patients studied were schizophrenics, psychoneurotics, and personality disorder patients. All three groups had higher violation rates. All but the schizophrenics had higher accident rates and a higher proportion of injury accidents.

Search terms: Driver records, Mental illness, Washington\*, Traffic violations, Accident rates, Driver behavior, Injury factors, Psychological factors

AVAILABILITY: Corporate author

HS-005 070 Fld. 3/4, 4/1

STAY OUT OF COURT...AND THE  
HOSPITAL

by E. D. Fales, Jr.

Published in Family Safety v28 n1  
p26-8 (Spr 1969)

Recent court decisions in automobile accident cases reveal changing interpretations of traffic laws by both judges and juries. This article should make the motorist a safer driver, both physically and legally.

Search terms: Traffic courts, Acquittals, Convictions, Liability\*, Traffic law, Accident responsibility, Insurance claims, State laws

HS-005 118 Fld. 3/4

THE INTERACTION BETWEEN  
THE DRIVER, VEHICLE AND  
ROAD

by E. R. Hoffman

Published in Australian Road Research v3 n2 p4-26 (Jun 1967) 27  
refs

Describes research meant to provide knowledge for more effective road and vehicle design. Knowledge of the limitations and capabilities of the driver may have a profound effect on the means adopted for his education and control. The driver, vehicle, and road are being studied as a complete system.

Search terms: Driver-vehicle interface, Driver behavior, Automobile design, Highway design, Driver education, Driving conditions, Driving tasks, Human factors engineering, Man machine systems

HS-005 119 Fld. 3/4

A CLOSER LOOK AT THE OLDER  
DRIVER

by Thomas W. Planek, Richard C. Fowler

Published in Traffic Safety v69 n5  
p8-11, 36-9 (May 1969)

The driving faults and accident experience of older drivers are analyzed. Data were obtained from some 3,600 questionnaires in addition to analysis of accident statistics. A course in defensive driving adapted somewhat for the needs of the elderly is recommended.

Search terms: Accident records, Driver behavior, Accident rates, Defensive driving\*, Age factor in

### 3/4 Driver Behavior (Cont.)

HS-005-119 (Cont.)

accidents, Age factor in driving, Traffic violations, Aged drivers\*, Sex factors, Aged\*, Physical fitness

HS-005 120 Fld. 3/4

#### THE ANALYSIS OF SKILLS IN DRIVING

by R. W. Cumming

Published in *Australian Road Research* v1 n9 p4-14 (Mar 1964) 14 refs

Driving skills may be analyzed in terms of known characteristics of human performance, of which the most significant is the rate of decision making. Findings on human performance are used to build a conceptual model of the driver as a decision maker, which is useful in deriving design principles for transportation systems. The driver's basic functions are perception, decision making, and control; these are analyzed and eleven conclusions presented.

Search terms: Driver skills, Decision making\*, Human behavior, Driver performance studies, Transportation planning, Models, Reaction time, Driving tasks, Perception

HS-005 121 Fld. 3/4, 2/4, 5/4

#### THE PSYCHOLOGICAL ASPECTS OF HIGHWAY SAFETY

by Calvin H. Brainard

Published in *Trial* v4 n5 p55-7, 60-3 (Aug-Sep 1968)

Presented at the New England Highway Traffic Safety Conference, Apr 1968.

Suggests that auto manufacturers and insurers have always attributed accidents to the driver, and that the new safety establishment sponsored by the federal government attributes accidents to technological and environmental conditions, particularly unsafe cars and highways. The potential effects of this shift in emphasis are examined, and a proper balance between the two kinds of causes is recommended. Driver behavior as an accident cause is examined.

Search terms: Injuries, Fatalities, Accident causes, Driver behavior, Highway design, Automobile design, Psychological factors, Insurance industry\*, Automotive industry, Highway safety, Environmental factors, Statistical analysis, Hazards, Costs

HS-800 104 Fld. 3/6, 3/4

#### DRIVER LICENSING AND PERFORMANCE. VOL 1, RESEARCH REVIEW AND RECOMMENDATIONS

by Louis Miller, John A. Dimling, Jr. Spindletop Research, Inc., Lexington, Ky.

Mar 1969 425p 659 refs

Contract FH-11-6533

Report no. 224-Vol-1; PB-183 527

Present driver licensing procedures have been documented and uniform licensing criteria and standards developed, taking into account driver characteristics and medical history, driving records, and other relevant data. The first volume reviews and evaluates major published research relevant to driver licensing and performance. A research program is recommended to develop alternative formulations of the driving task, develop a model to predict accident probabilities for various groups of drivers, develop diagnostic and remedial procedures, and investigate informal control of driver behavior.

Search terms: Driver license standards, Driver performance, Driver licensing, Driver characteristics, Driver physical fitness, Medical factors, Bibliographies\*, Driving tasks, Driver improvement, Driver behavior, Psychological factors, Drugs, Accident proneness, Accident risks, Vision\*, Handicapped drivers, Suicide\*, Drinking drivers

AVAILABILITY: CFSTI as PB-183 527

HS-005 157 Fld. 2/9; 3/4

#### ESTIMATING MINIMUM GAP ACCEPTANCES FOR MERGING MOTORIST

by D. R. McNeil; J. H. T. Morgan

Published in *Transportation Science* v2 n3 p265-77 (Aug 1968) 5 refs

Equations are used to estimate the minimum gap distribution a driver will accept before attempting to cross or turn into a through street. Data obtained from an intersection offer a numerical analysis. Study is of value in determining stop sign placement.

Search terms: Merging traffic; Intersections; Turning (direction change); Mathematical models; Traffic flow; Stop signs\*; Driver behavior; Gap acceptance\*; Time factors\*

HS-005 168 Fld. 3/4

#### THE ABC'S OF FREEWAY DRIVING

Anonymous

Published in *Motorland* v90 n3 p34-5 (Mar 1969)

Freeway driving requires special skills and techniques. Tips are given for safe driving: merge smoothly with freeway traffic, be alert to freeway signs, keep pace with traffic, pass with care, guard against fatigue, know what to do in emergencies, and prepare for leaving the freeway.

Search terms: Driving conditions, Freeways; Merging traffic; Traffic flow; Signs (displays); Speed; Passing (driving); Driver fatigue; Emergencies\*; Exits; Driver skills

HS-005 169 Fld. 3/4

#### DEVELOPMENT OF THE METHOD OF SYSTEMATIC OBSERVATION OF DRIVER BEHAVIOUR

by S. W. Quenault

England, Road Research Lab., Crowthorne, Berks.

1968 60p 6 refs

Report No. RRL-LR-213

Various methods used to systematically observe driver behavior on the road are described, results are compared. Elements of the driving task included: speeds, overtaking, signals used (or not used), mirror usage, driving posture, etc. Training and equipment used for the observers are also described.

Search terms: Driver behavior; Driving tasks; Driver skills; Driver performance; Performance tests; Surveys

### 3/4 Driver Behavior (Cont.)

HS-005 170 Fld. 3/4

ANALYSIS OF AGE AND EXPERIENCE OF RESPONSIBLE AND NON-RESPONSIBLE DRIVERS INVOLVED IN MOTOR-CYCLE VERSUS OTHER MOTOR VEHICLE COLLISIONS IN VICTORIA, 1961 AND 1962

by L. A. Foldvary

Published in *Australian Road Research* v2 n3 p43-50 (Mar 1965)

Analysis has been made of 959 collisions between motorcycles and other motor vehicles. In 97% of the cases, one or both parties held responsible had violated traffic rules. Statistics are given for age distribution, a highly significant factor. It is suggested that "driving experience" be substituted for "age distribution" as a concept. Drivers of autos and motorcycles having less than three years experience tend to be involved in more collisions than drivers with more experience in either kind of vehicle.

Search terms: Collisions (accidents); Traffic violations; Age factor in accidents; Motorcycle accidents; Motor vehicle accidents; Accident analysis; Accident data; Driver skills; Australia\*; Accident responsibility; Driving experience\*

HS-005 171 Fld. 3/4

DRIVERS' MISCONCEPTIONS DELUDE THEM INTO FALSE SECURITY

by Steve Franzmeir

Published in *Traffic Digest and Review* v12 n1 p4-7 (Jan 1964)

Among the dangerous misconceptions held by many drivers are: that most accidents are caused by speeding and involve only reckless drivers; that billboards showing mangled bodies could be an effective safety measure; that drivers who have no violations will have no accidents; that superior driving skill will enable drivers to avoid accidents; that it is safe to go around corners at twice the posted speed limit.

Search terms: Driver attitudes;

Accident causes; Reckless driving; Safety propaganda; Emotional appeals; Traffic violations; Driver skills; High speed; Unsafe speed; Cornering; Speed limits

HS-005 172 Fld. 3/4; 1/3

PSYCHOLOGICAL ASPECTS OF TRAFFIC ACCIDENTS

by Leon G. Goldstein

Published in *Traffic Digest and Review* v12 n6 p10-2, 23 (Jul 1964)

Aspects discussed are the tendency to assume accidents happen only to bad drivers, to underassess dangers, to drive while drunk; the difficulty of assessing driver training for accident reduction; the place of attitudes in causing accidents; the role of age, marital status, and sex in driving accidents. Highway safety research needs are outlined. Text is from a Voice of America program for Japan, which is now dealing with the same traffic problems already familiar to Americans.

Search terms: Accident causes; Highway safety; Driver attitudes; Driver characteristics; Drinking drivers; Driver intoxication; Accident prevention; Driver education; Age factor in accidents; Age factor in driving; Sex factor in accidents; Sex factor in driving; Sociological aspects

HS-005 204 Fld. 1/3; 3/4

ROAD ACCIDENTS—HUMAN CAUSES AND GENERAL REMEDIES

by J. O. Darlington

Published in *Journal of the Institution of Highway Engineers* v14 n8 p19-22 (Aug 1967)

Considers four human factors contributing to accidents: physical, mental, temperamental, and moral. Discusses four corrective measures: engineering and production of safer vehicles, enforcement, publicity, and training schemes.

Search terms: Accident causes; Driver skills; Driver fatigue; Safety campaigns; Law enforcement\*; Careless driving; Reckless driving; Driver behavior; Driver attitudes; Safety propaganda; Driver educa-

tion; Driver physical fitness; Safety design

HS-005 228 Fld. 3/4

SUICIDE IN AUTOMOBILE ACCIDENTS

by Marvin G. Frank

Published in *Medico-Legal Bulletin* v147 p1-4 (Jul 1965)

Some of the factors occurring when man uses his auto as a lethal weapon against himself or others are examined. However, legislation requiring physicians to report mentally or physically unsafe drivers is considered impractical.

Search terms: Suicide\*; Physicians\*; Mental illness; Driver license laws; Driver behavior; Homicide\*; Psychological factors; Driver physical fitness; Medical ethics\*; Accident factors

HS-005 229 Fld. 3/4

NIGHT DRIVING HAZARDS

Anonymous

Published in *Mobile Living* v18 n11 p28-9 (Nov 1968)

Stresses importance of reflective signs and good illumination to prevent night driving accidents. Lists tips for safer night driving as carrying emergency equipment, using turnpikes rather than non-interstate roads, reporting poorly marked intersections to proper authorities, proper care and use of car's lights, and precautions to be taken in event of emergency stops.

Search terms: Night driving; Headlights; Highway lighting; Reflecting surfaces; Reflectors; Glare; Safety devices; Roadside parking; Highway safety; Intersections; Emergency equipment\*; Accident prevention

HS-005 230 Fld. 3/4

EMOTIONS AND DRIVING

by Waldemar Schweisheimer

Published in *Go-Transport Times of the West* v28 n11 p39-40 (Nov 1968)

Covers dangerous effects of emotions on motor vehicle operators. Gives advice to the emotionally upset driver and lists five rules for keeping nerves steady while driving.

### 3/4 Driver Behavior (Cont.)

HS-005-230 (Cont.)

Search terms: Driver behavior; Emotions\*; Motor vehicle accidents; Personality; Problem drivers; Accident proneness; Psychological factors

HS-005 231 Fld. 3/4

#### PEAK PERIOD COMFORT AND SERVICE EVALUATION OF AN URBAN FREEWAY AND AN ALTERNATE SURFACE STREET

by Vasant H. Surti; Edward F. Gervais

Published in *Highway Research Record* n157 p144-78 (1967) 7 refs

Presented at the 45th Annual Meeting, HRB.

Study to evaluate driver tensions and stresses during rush-hour traffic while using two facilities radically different in design and to determine to what degree a driver would either accept or be accommodated on each facility. Sites selected were a freeway and an alternate route a motorist would take if the freeway ramp was closed. Seven variables resulting from driver reactions were measured by the galvanic skin response instrument and the drivometer. These variables are combined into a service index which incorporates all the variables used in the comfort index. During peak travel periods, freeway operates at a lower service and comfort level than surface routes.

Search terms: Measuring instruments; Driver behavior; Driving conditions; Driver performance studies; Travel patterns; Travel time; Freeways; Traffic data analysis; Stress conditions; Ramps; Reactions (physiology); Peak hour traffic; Traffic flow patterns; Traffic congestion; Psychological factors

HS-005 232 Fld. 3/4

#### DRIVER JUDGMENT IN OVERTAKING SITUATIONS

by Carl A. Silver; Eugene Farber

Published in *Highway Research Record* n247 p57-62 (1968)

This study evaluates the ability of

drivers to judge headway and closing rate in overtaking and passing situations. The prevalence of rear-end collisions on two-lane highways suggests remedial action is needed to assist drivers in passing.

Search terms: Overtaking (driving); Passing (driving); Driver behavior; Reaction time; Rear end collisions; Speed; Decision making\*; Two lane highways; Following distance; Time factors\*

HS-005 233 Fld. 3/4

#### BEHAVIOR OF DRIVERS PERFORMING A FLYING PASS

by Eugene Farber; Carl A. Silver

Published in *Highway Research Record* n247 p51-6 (1968)

A systematic controlled study of passing judgment in situations where sight distance was the limiting factor is described. Drivers were responsive to all variables that determined validity of the passing decision. The only remaining variable that could be considered for remediation is closing rate.

Search terms: Overtaking (driving); Passing (driving); Driver behavior; Speed; Decision making\*; Visibility; Gap acceptance\*

HS-005 234 Fld. 3/4

#### DRIVERS' DECISIONS IN OVERTAKING AND PASSING

by Donald A. Gordon; Truman M. Mast

Bureau of Public Roads, Washington, D.C.

Published in *Highway Research Record* n247 p42-50 (1968) 10 refs

Drivers could not estimate overtaking and passing distance accurately. Significantly larger errors were made in an unfamiliar vehicle; overtaking and passing required proportionally more distances as lead car speed increased. At 50 mph, 60-78% of the estimates were too low.

Search terms: Speed; Overtaking (driving); Passing (driving); Decision making\*; Driver behavior; Two lane highways

HS-005 245 Fld. 5/2; 3/4

#### RESPONSIBILITIES OF THE SCHOOL BUS DRIVER

Anonymous

Published in *School Bus Fleet* v13 n6 p43-6 (Dec 1968-Jan 1969)

Both general and specific instructions are listed. Areas covered are: routes, loading, and unloading; passenger safety; tips to drivers on defensive driving.

Search terms: School buses; School bus drivers; Children; Defensive driving\*; Highway safety; Travel patterns

HS-005 281 Fld. 3/4

#### KNOWLEDGE OF CLOSING RATE VERSUS KNOWLEDGE OF ONCOMING-CAR SPEED AS DETERMINERS OF DRIVER PASSING BEHAVIOR

by Eugene Farber; Carl A. Silver; Daniel Landis

Published in *Highway Research Record* n247 p1-6 (1968) 7 refs

In controlled experiments on a closed roadway, subjects display no ability to discriminate oncoming-car speed in making passing judgment. The feasibility of providing drivers with knowledge of the speeds of other vehicles should be explored with respect to its effect on safety.

Search terms: Overtaking (driving); Passing (driving); Driver behavior; Speed; Decision making\*; Driving tasks; Gap acceptance\*; Passing aid systems; Driver performance studies

HS-005 282 Fld. 3/4; 1/3

#### PSYCHOLOGICAL AND BEHAVIORAL ASPECTS OF AUTOMOBILE ACCIDENTS

by Ross A. McFarland

Published in *Traffic Safety Research Review* v12 n3 p71-80 (Sep 1968) 49 refs

Review of research findings suggests that methods of epidemiology and biostatistics be used for the study of accidental deaths and injuries. Discusses interrelationships between driver, vehicle and environment, both physical and social; personal factors

### 3/4 Driver Behavior (Cont.)

HS-005-282 (Cont.)

as age, experience and training, and emotional adjustment; results of studies on alcohol, drugs, diseases and physical defects. Application of data from the field of human engineering or biotechnology in the design of vehicles and highway equipment is recommended as an important means of improving safety and achieving more efficient man-machine interaction.

Search terms: Accident causes; Driver attitudes; Epidemiology\*; Biostatistics\*; Age factor in accidents; Environmental factors; Psychological factors; Driver behavior; Psychological tests; Drugs; Man machine systems; Automobile design; Driving experience\*; Driver physical fitness; Alcoholic beverages; Human factors engineering

HS-005 285 Fld. 3/12; 3/4

#### THE USE OF THE EYES IN STEERING A CAR ON STRAIGHT AND CURVED ROADS

by Glenn A. Fry

Published in *American Journal of Optometry and Archives of American Academy of Optometry* v45 n6 p374-91 (Jun 1968) 7 refs

Steering behavior of a driver must be studied by comparing the path of the car to the course of the road. Means must be provided for measuring the path of the car and the course of the road. Several methods for acquiring such data are discussed. An attempt has been made to identify the visual cues used in steering. These must be understood to design tests for determining the effect of impaired vision on steering behavior.

Search terms: Steering wheels; Steering (driving); Driver behavior; Road curves; Driver performance studies; Driver-vehicle interface; Vision disorders\*; Vision; Driving tasks

HS-005 356 Fld. 3/4

#### FOLLOW-UP OF BRIEF DRIVER IMPROVEMENT INTERVIEWS IN OREGON

by Noel Kaestner; Edward M. Syring

Published in *Traffic Safety Research Review* v12 n4 p111-7 (Dec 1968)

Grant PHS-AC-00169

Compares driving records of 660 interviewed drivers and a control group, a year after interviewing. A structured, motivationally and educationally oriented interview was used. Interviewed drivers were more trouble-free, had fewer violations and accidents. The primary impact of a single, short individual interview is largely confined to the first post-interview year. A program of driver improvement that would involve successive appearances of problem drivers over an extended time might extend the impact of single interviews.

Search terms: Interviews\*; Driver improvement; Driver behavior; Problem drivers; Driver records

HS-005 357 Fld. 3/4; 1/3

#### HOW TO AVOID AUTOMOBILE ACCIDENTS!

by Fred E. Taylor

1968 146p

Published by Crown Publishers, Inc., New York, at \$3.95

A general study of the accident problem. Includes unsafe design in highways, cars, bridges, signs, and other hazards; driver education and capability; improper laws and enforcement; inadequate signs; crash studies; drunk and careless drivers; mass transit and automatic highways; human performance capabilities. Includes much advice on defensive driving.

Search terms: Automobile accidents; Defensive driving\*; Highway design; Bridge design; Signs (displays); Hazards; Driver education; Driver skills; Law enforcement\*; Accident prevention; Legislation; Crash research; Drinking drivers; Driver intoxication; Careless driving; Mass transportation; automatic highways; Human behavior; Negligence\*; Accident location; Automobile design

HS-810 071 Fld. 1/3; 3/4

#### SAFE DRIVING, A WAY TO A BETTER LIFE

by Robert Brenner

National Highway Safety Bureau, Washington, D.C.

24 Apr 1969 12p

Remarks prepared for delivery before the Sixteenth Annual District of Columbia Teenage Traffic Safety Conference, Washington, D.C.

Discusses the increasing accident rate, especially among young drivers. Comments on the need for the automobile in cities, where public transportation is deteriorating. Explains the work of the National Highway Safety Bureau in accident prevention, drunk driver control, crash protection, motorcycle safety, emergency medical services, and other aspects of highway safety.

Search terms: Driver behavior; Accident rates; Young adult drivers\*; Public transportation; Urban areas; National Highway Safety Bureau\*; Accident prevention; Drinking drivers; Driver intoxication; Occupant protection; Motorcycle safety; Emergency medical services; Highway safety

AVAILABILITY: NHSS

HS-005 414 Fld. 5/10; 3/4

#### HEADLAMP BEAM USAGE ON U.S. HIGHWAYS. FINAL REPORT ON PHASE 3

by Charles T. Hare; Roger H. Hemion  
Southwest Research Inst., San Antonio, Tex.

2 Dec 1968 91p 7 refs

Contract CPR-11-4126

Report no. AR-666; PB-183 002

Headlamp beam usage by drivers was analyzed. Information observed for each vehicle included: type vehicle, number of headlights, speed, initial beam usage, trailing distances, direction of travel, distance from opposing vehicle, beam change in response to opposing vehicle, presence of leading vehicle. Observations were made on lighted and unlighted roads, both rural and suburban, and on two-lane and four-lane sections. Traffic, glare, speed, weather conditions, visibility, and other factors influence driver usage of headlights.

### 3/4 Driver Behavior (Cont.)

HS-005-414 (Cont.)

Search terms: Headlights; Night driving; Driver behavior; Weather; Test equipment; Glare; Visibility; Statistical analysis; Following distance; Rural highways; Two lane highways; Speed patterns; Traffic flow; Suburban areas; Highway lighting; Driver performance studies

AVAILABILITY: CFSTI as PB-183 002

HS-005 438 Fld. 2/9; 3/4

#### WRONG-WAY DRIVING OFF-RAMP STUDIES (EXTENSION OF PHASE 2). FINAL REPORT.

by Slade-Hulbert; Jinx Beers

California Univ., Los Angeles. Inst. of Transportation and Traffic Engineering

Dec 1966 20p 7 refs  
Report no. ITTE-RR-50

Drivers were observed and their responses measured as they unexpectedly came upon wrong way ramp message signs. Five different messages were tested. Those not including the words "wrong way" were more confusing to drivers. An estimated 5% of young normal drivers can be expected to ignore the signs.

Search terms: Freeways; Wrong way\*; Highway signs; Ramps; Driver behavior; Young adult drivers\*; California\*

AVAILABILITY: Corporate author

HS-005 454 Fld. 5/4; 3/4

#### DRIVING SIMULATORS FOR RESEARCH PURPOSES

by J. Hoskovec; B. M. Biehl

Verkehrswissenschaftliches Inst., Vienna (Austria)

Dec 1968 31p 54 refs

Includes abstract in German.

Literature review examines automobile simulators used to study driver behavior, learning, perception, alertness, fatigue, drugs, and alcohol. Concludes that psychological research done with simulators is inadequate, that little research involving danger-

ous situations has been done with simulators, that some results are of unknown validity, that most simulators are rather simple devices.

Search terms: Driving simulation; Automobile simulators; Drugs; Drinking drivers; Driver behavior; Learning; Perception; Driver fatigue; Reviews\*; Driver intoxication; Alcoholic beverages

AVAILABILITY: Corporate author, Wien 3, Olzeltgasse 3

HS-005 468 Fld. 5/18; 3/4

#### THE EFFECT OF VARIABLE RATIO STEERING GEARS ON DRIVER PREFERENCE AND PERFORMANCE

by Paul L. Olson; Richard R. Thompson

General Motors Research Labs., Warren, Mich.

1967 25p

Two variable ratio and three linear steering gears were compared to evaluate their effect on vehicle control in the hands of normal drivers. Variable ratio gears may significantly improve performance in certain driving tasks. Subjects preferred variable ratio gear of moderate characteristics and dislike more extreme designs. Subjects were tested on turning, parking, and maneuvering.

Search terms: Motor vehicle handling; Steering gear; Ratios\*; Driving tasks; Parking; Turning (direction change); Driver performance

AVAILABILITY: Corporate author

HS-005 481 Fld. 1/3; 3/4

#### HUMAN FACTORS IN ROAD ACCIDENTS

by Michel Roche

Published in *International Criminal Police Review* v23 n216 p58-66 (Mar 1968)

Examines the human aspects of the environment-man-car system to see how accidents can be prevented. Discusses psycho-social aspects of the problem and the influence of physical factors on driving.

Search terms: Man machine system; Human factors engineering; Psychological factors; Sociological aspects; Accident prevention; Driving conditions; Driver physical fitness; Environmental factors; Driver behavior; Driver-vehicle interface

HS-005 555 Fld. 3/4; 3/6

#### WHAT "CLOSE CALLS" DO TO YOU AND YOUR DRIVING

by James G. Busse; W. Stevenson Bacon

Published in *Popular Science* v194 n3 p98-101 (Mar 1969)

Instrumented cars can be used to test driver stress and strain under heavy traffic conditions. Poor drivers can be eliminated, health risks spotted, and highway design improved. Ford's HSR (Highway Systems Research) instrumented car is described. This type of car is presently used for research, might eventually be used to test driver license applicants.

Search terms: Driver behavior; Driving tasks; Driver physical fitness; Measuring instruments; Driver performance; Accident prevention; Driver tests; Driving conditions; Stress conditions; Driver license examination; Highway design

HS-005 578 Fld. 3/4

#### DRIVER CONTROL BOOSTS SAFETY IN LEASED FLEETS

Anonymous

Published in *Fleet Owner* v61 n8 p81-3 (Aug 1966)

Drivers of leased trucks have higher accident rates than drivers of company-owned fleets. Safety promotion efforts among drivers are discussed, including awards, contests, programs, meetings. Drivers' records are carefully checked for offences or accidents.

Search terms: Truck drivers; Accident rates; Safety campaigns; Safety programs; Safety propaganda; Driver records; Traffic violations; Accident prevention; Driver improvement; Rented vehicles; Fleets (motor vehicles)

### 3/4 Driver Behavior (Cont.)

HS-005 579 Fld. 3/4

#### AUTOMOBILE ACCIDENTS AND DRIVER REACTION PATTERN

by Paul Babarik

Published in *Journal of Applied Psychology* v52 n1 p49-54 (1968) 7 refs

Taxicab drivers who report an abnormal number of accidents in which they were struck from behind were found to have a reaction pattern made up of slow initiation time and compensatingly fast movement time. They probably stop too abruptly for the following driver. These drivers, however, had fewer headway accidents and thus had lower overall accident rates. Implications of the findings are discussed.

Search terms: Accident studies; Accident proneness; Accident causes; Reaction time; Driver behavior; Rear end collisions; Perception; Psychological tests; Taxicabs\*; Professional drivers; Accident rates

HS-005 580 Fld. 3/4

#### AUTOMATIC DRIVING

by Michael Bott

Published in *Autocar* v130 n3819 p2-4 (24 Apr 1969)

A properly trained and experienced driver can drive automatically as long as his reflexes can deal with situations that arise. How this automatic driving function happens and its significance are explained.

Search terms: Driver behavior; Driver skills; Motor vehicle control; Psychological factors; Reactions (physiology); Human behavior

HS-005 581 Fld. 3/4; 3/9

#### THE PROBLEM OF THE OLDER DRIVER

by Verne Orr

Published in *Highway User* p18-9 (Dec 1967)

The proportion of older drivers is rising in California, which now has 1,250,000 drivers over 60. The state's

older drivers are discussed. The principal handicaps of older drivers are diminishing vision, hearing, and reaction time, and poorer perception of complex traffic situations.

Search terms: Aged drivers\*; California\*; Vision\*; Hearing\*; Reaction time; Driver physical fitness; Driver characteristics; Driver license renewal

HS-005 636 Fld. 3/4

#### DRIVER OPINIONS AND CHARACTERISTICS RELATED TO RURAL SPEED

Lee A. Webster

Published in *Traffic Engineering* v36 n10 p35-8 (Jul 1966)

A total of 1,440 drivers were interviewed at 12 rural sites in Illinois and the data analyzed by computer. Drivers generally liked to drive and felt that the state-wide Illinois speed limit was the maximum safe speed. They were aware of the speed limit and of the speed they were traveling. Among the factors influencing a driver's choice of speed were expected arrival time, frequency of road use, opinion of speed limit, vehicle type, amount of driving connected with their work, traffic, weather, and road conditions. Fifteen characteristics of the driving pattern analysis are discussed.

Search terms: Driver behavior; Driver attitudes; Speed limits; Speed patterns; Illinois\*; Driving conditions; Traffic flow patterns; Environmental factors; Motor vehicle characteristics; Data processing; Driver characteristics; Highway usage; Rural highways; Interviews\*; Computers

HS-005 637 Fld. 3/4; 3/5

#### UNTRAINED DRIVER'S RECORD UNPREDICTABLE, BUT TRAINED ONE ALWAYS IS BETTER

by Fred E. Vanosdall

Published in *Traffic Digest and Review* v12 n1 p8,20-1 (Jan 1964)

Presented at a regional meeting of the National Assoc. of Fleet Administration, Nov. 21, 1963, Chicago.

Outlines the attitudes and skills that make a good driver, especially for a

attitudes of bad drivers. Suggests that motor fleet companies should emphasize safety and should provide training in the basic principles of safe driving.

Search terms: Driver attitudes; Driver skills; Careless driving; Safety programs; Driver education; Fleets (motor vehicles); Psychological factors; Professional drivers; Driver records

HS-005 638 Fld. 3/4

#### ABILITY OF DRIVERS TO MAKE CRITICAL PASSING JUDGMENTS

by Howard V. Jones; Norman W. Heimstra

Published in *Highway Research Record* n122 p89-92 (1966)

One of the critical elements involved in passing behavior is clearance time, i.e., the ability of the driver to allow the right time between the completion of his pass and the arrival of an oncoming car. Young male drivers were tested for their accuracy in estimating clearance time. Of 190 estimates, 97 allowed more than enough time and 93 allowed less than enough time. It is concluded that many drivers cannot estimate clearance time safely.

Search terms: Time factors\*; Passing (driving); Young adult drivers\*; Driver behavior; Driver performance studies

HS-005 639 Fld. 3/4

#### COMPONENTS OF SKILLED PERFORMANCE

by Michael I. Posner

Published in *Science* v152 n3730 p1712-8 (24 Jun 1966)

Human limitations of attention and memory are basic to the analysis of skilled performance. This article discusses recent efforts to determine a channel capacity for man in simple tasks of information transmission, the use of these techniques to demonstrate that the rate of loss of information from a short-term memory system depends on the attention available, and the phenomena of interference and imagery. Applications of these principles to measure of performance in tasks

### 3/4 Driver Behavior (Cont.)

#### HS-005 639 (Cont.)

Search terms: Psychology; Driver skills; Performance tests; Psychological tests; Human behavior; Driver tasks

#### HS-005 640 Fld. 3/4; 3/5

### IN DEFENSE OF THE AUTOMOBILE...

by Leo Levine

Published in *Motor Trend* v21 n4 p48-51 (Apr 1969)

Reviews the development of the highway and traffic safety movement. Attempts to point out the principal cause of accidents and to suggest solutions. Suggests that inability of drivers to act quickly enough is the biggest problem, that drivers need to be taught defensive driving and accident avoidance procedures.

Search terms: Defensive driving\*; Driver behavior; Accident prevention; Highway safety; Traffic safety; Accident causes; Reaction time; Driver education; Skid pans\*

#### HS-005 641 Fld. 3/4; 3/5

### FLEET DRIVERS NEED TRAINING TO COPE WITH UNUSUAL SITUATIONS

by J. Stannard Baker

Published in *Traffic Digest and Review* v12 n1 p9-11 (Jan 1964)

Presented at the 25th Annual Safety Meeting of the EBASCO Client Companies Oct. 30, 1963, Chicago.

Outlines a program for the training of public utility company drivers. Good drivers need knowledge, skills, and proper attitudes. Some aspects of good driving habits are discussed, such as speed control at the approach to corners and turns and ability to resist distractions.

Search terms: Driver education; Driver attitudes; Driver skills; Speed; Cornering; Turning (direction change); Fleets (motor vehicles); Professional drivers

#### HS-005 642 Fld. 3/4

### CONTINUOUS ELECTROCARDIOGRAPHIC MONITORING

### DURING AUTOMOBILE DRIVING. STUDIES IN NORMAL SUBJECTS AND PATIENTS WITH CORONARY DISEASE

by Samuel Bellet; Laurian Roman; John Kostis; Allan Slater

Published in *American Journal of Cardiology* v22 n6 p856-62 (Dec 1968) 28 refs

The electrocardiogram was continuously recorded during a two and a half hour period of driving in 65 normal subjects and in 66 subjects with documented coronary heart disease. In normal subjects, except for a variable increase in heart rate, no significant changes were observed. However, among subjects with coronary heart disease, significant changes in 16.7% of subjects occurred under relatively favorable driving conditions. The relation of such changes to accidents merits further study.

Search terms: Driving conditions; Electrocardiography\*; Heart diseases\*; Driving tasks; Accident factors; Heart rate\*; Driver physical fitness; Stress conditions; Driver characteristics

#### HS-005 644 Fld. 3/5; 3/4

### USING DRIVERS TO TRAIN DRIVERS

by Dorothy Atkin

Published in *Fleet Owner* v61 n7 p100-4 (Jul 1966)

Describes a truck fleet's program in which regular union drivers were used to upgrade the skills of casual drivers and helpers. Emphasis was on improvement in driver attitudes and habits rather than discipline. Accident rate of the drivers trained has dropped 50%.

Search terms: Accident rates; Truck drivers; Driver attitudes; Driver skills; Driver improvement; Driver behavior; Accident prevention; Fleet driver training\*

#### HS-005 669 Fld. 1/3; 3/4

### THE INFLUENCE OF AGE UPON THE ACCIDENT EXPERIENCE OF BUS DRIVERS

by P. Froggatt

Published in *Annals of Occupational Hygiene* v5 p53-67 (Apr-Jun 1962) 16 refs

A survey of bus and trolley-bus drivers in Northern Ireland showed that age had no influence on the accident rate; that increasing experience was a significant factor in lowering the accident rate, certainly in the first few years of driving; and that the accident rate varied over the years considered. The data did not allow assessment of the general effect of youth on the accident rate. Completely valid accident data probably cannot be obtained.

Search terms: Bus drivers; Northern Ireland\*; Age factor in accidents; Accident rates; Driving experience\*; Variance analysis\*; Accident data

#### HS-005 676 Fld. 2/9; 3/4

### POPULATION EXPECTANCIES AND TRAFFIC SYSTEM DESIGN

by W. McGill

Published in *Australian Road Research* v2 n7 p19-42 (Mar 1966)

Tasks are performed best when the responses required are expected or natural from past experience. The application of this principle to traffic system design should reduce driving difficulty. Its implications for traffic signal coding have been investigated. A consideration of right-of-way in terms of population expectancies and existing laws suggests a need to re-examine the present system. Material gathered in interviews with drivers and reporting their opinions of driving and traffic problems is included.

Search terms: Driver performance; Driving tasks; Driver behavior; Traffic signals; Right-of-way (traffic rules)\*; Populations; Traffic laws; Traffic control; Interviews\*; Australia\*; Intersections

#### HS-005 690 Fld. 3/4

### FACTORS INFLUENCING DRIVER ATTITUDES, SKILL AND PERFORMANCE

by Gordon H. Sheeche

Published in *Police* v9 n2 p81-5 (Nov-Dec 1964)

Presented at Liberty Mutual Council on the Automobile and Public Health, Boston, Nov. 1963.

### 3/4 Driver Behavior (Cont.)

#### HS-005-690 (Cont.)

Factors are grouped into six major categories: the makeup of the individual; the knowledge acquired, extent of driving experience, judgment, and habits development; social and family influences upon the driver; influence of regulatory agencies' activities; personal concerns and motivations; mental, emotional, and physical readiness to drive. These factors are discussed in terms of a ten-point analysis of driving behavior.

Search terms: Driver behavior; Driver attitudes; Driver skills; Driver performance; Psychological factors; Sociological aspects; Driver physical fitness; Driving experience\*; Traffic law enforcement; Emotions; Motivation studies

#### HS-005 691 Fld. 3/4; 3/12

##### HUMAN PERFORMANCE

by John W. Senders

Published in *International Science and Technology* n55 p58-68, 89-90 (Jul 1966) 9 refs

The psychological and physical boundaries of man's ability to process information are described. The driving task is included in the analysis of how man performs. Much emphasis is placed on vision.

Search terms: Driving tasks; Human behavior; Human factors engineering; Vision\*; Man machine systems; Psychological factors; Physiology; Information theory; Visual perception; Nervous system

#### HS-005 692 Fld. 3/4; 1/3

##### ACCIDENTS AND EXPRESSWAY DRIVING

by D. Grant Mickle

Published in *American Road Builder* v44 n6 p8-10 (Jun 1967)

The freeway is the first significant change in design since the wagon road. The kinds of errors drivers make in freeway driving are discussed and freeway driving is contrasted with conventional road and street driving. The skills needed are basi-

cally the same. The sociological impact of the freeway is outlined.

Search terms: Freeways; Driver skills; Driver behavior; Driving tasks; Sociological aspects; Accident types; Freeway planning;

#### HS-005 693 Fld. 3/4

##### SAFE DRIVING: NO. 1 STATUS SYMBOL!

by John Burke

Published in *Highway Patrolman* v33 n1 p6, 42-4, 83 (Mar 1969)

Suggests that our present addiction to speeding, drinking, and careless driving tactics reflect our uncertainty about the future. Comments on the use of the auto and motorcycle as status symbols. Many drivers enjoy danger, drive recklessly, and fail to use seat belts and other safety measures.

Search terms: Driving behavior; Drinking drivers; Careless driving; Reckless driving; Seat belt usage\*; High speed; Psychological factors; Driver attitudes; Motorcycles; Safety measures

#### HS-005 739 Fld. 2/5; 3/4

##### FREEWAY ILLUMINATION AND DRIVING PERFORMANCE

by Glenn F. Lindsay; Thomas H. Rockwell

Published in *Traffic Engineering* v39 n6 p36-42 (Mar 1969)

A series of tests on the Connecticut Turnpike studied performance under illumination levels of 0.22 and 0.62 foot candles. Speeds were slightly greater and gas pedal activity increased under brighter lighting, but steering seemed unaffected. Roadway geometry had a greater effect on driver control than did illumination, probably because headlights washed out the small fixed lighting levels changes. It is not yet possible to ascertain the practical implication of the findings.

Search terms: Night driving; Motor vehicle handling; Driver performance; Highway lighting; Speed patterns; Steering (driving); Headlights; Highway characteristics; Driver behavior; Connecticut\*; Accelerator pedals\*; Road tests

#### HS-005 753 Fld. 3/4

##### STUDIES OF COMPONENT MOVEMENTS, CONSISTENCY AND SPARE CAPACITY OF CAR DRIVERS

by I. D. Brown

Published in *Annals of Occupational Hygiene* v5 p131-143 11 refs

Past and present work at the Applied Psychology Research Unit, Cambridge, on the objective measurement of driver performance in real-life situations, is described. The present method is to give the driver a subsidiary task to perform when he can and to use the level of performance on this task as a measure of spare capacity, which reflects the difficulty of driving. This method was used to study fatigue and driving.

Search terms: Driver skills; Driving tasks; Driver behavior; Psychological tests; Driver performance studies; Driver fatigue

#### HS-005 754 Fld. 3/4

##### SCARE TECHNIQUE AND TRAFFIC SAFETY

by James L. Malfetti

Published in *Traffic Quarterly* v15 n2 p318-30 (Apr 1961) 15 refs

Scare techniques are defined as those meant to raise a high degree of fear in an effort to improve driving behavior. The effectiveness of these techniques, audience reaction, and recommendations are discussed. Shock propaganda may sometimes be effective in creating public interest in safety; it is, however, ineffective in improving the behavior of individual drivers. It may do more harm than good.

Search terms: Driver improvement; Safety propaganda; Emotional appeals; Psychological factors; Accident prevention; Driver behavior; Safety campaigns; Highway safety

#### HS-005 755 Fld. 3/4

##### THE HUMAN FACTOR

Anonymous

Published in *World Medical Journal* v12 n5 p139-41 (Sep-Oct 1965)

A disorder cannot be prevented when its causative agents are understood if

### 3/4 Driver Behavior (Cont.)

Presented at 44th Annual Meeting,  
Highway Research Board, 11-15  
Jan 1965

by D. H. Taylor

Published in *Ergonomics* v7 n4  
p439-51 (Oct. 1964) 12 refs

#### HS-005-755 (Cont.)

there is a conflict of human interests, as in car driving and smoking. Cultural and emotional aspects of "car worship" must be included in future discussions of accidents. Outline is given of the social and psychological factors leading to accidents, the incidence of psychopathic behavior among drivers, and the results of a study of professional drivers in Norway. They were found to have higher than average rates of psychiatric disorder, alcoholism, and drug addiction.

Search terms: Driver behavior; Driver characteristics; Psychological factors; Sociological aspects; Emotional factors\*; Accident causes; Professional drivers; Norway\*; Alcoholism; Drug addiction; Mental illness; Accident proneness

Describes an investigation of the effects of fatigue on several performance tasks required in the operation of a driving simulator. Tests with 60 subjects indicate considerable differences between tasks in their demonstrated sensitivity to fatigue. Some tasks showed a performance decrement, some no decrement, and some an improvement.

Search terms: Driving simulation; Driver performance; Driver fatigue; Reaction time; Driving tasks

#### HS-005 826 Fld. 1/3; 3/4; 3/9

##### AGE AND AUTOMOTIVE ACCIDENTS

by Donald P. Kent; Geraldine B. Novotny

Published in *Geriatrics* v16 n6 p271-7 (Jun 1961) 15 refs

Data by age groups show that the accident index for drivers between 60 and 69 is well below the national average, while that for those above 70 equals the national average. Drivers below the age of 20 have the poorest record, and drivers up to 30 have a poorer record than those over 75 according to National Safety Council figures. A similar pattern is reported by Connecticut data. Fatal accidents per miles driven and age of driver are discussed briefly. Periodic examination and other measures designed to decrease accidents are appropriate for all age groups, although attention in this regard has been focused on the elderly driver.

Search terms: Aged drivers\*; Age factor in accidents; Connecticut\*; Driver miles\*; Fatalities; Accident data; Driver physical fitness; Vision disorders\*; Reaction time; Drinking drivers; Blood alcohol levels\*; Hearing\*; Handicapped drivers; Medical conditions; Medical examination; Psychological tests; Defective vehicles; Highway safety; Accident causes; Accident prevention; Accident rates

#### HS-005 835 Fld. 3/4

##### DRIVERS' GALVANIC SKIN RESPONSE AND THE RISK OF ACCIDENT

Galvanic skin responses (GSR) of 20 drivers were measured in two studies covering a wide range of roads and road conditions. Accident histories were obtained for the roads in one of the studies. It is shown that the level of GSR activity does not depend primarily on the nature of the road or conditions. Consistent sources of variations in the GSR are observed, one of them apparently being the subject's driving experience. The distribution of GSR per unit distance traveled was found to be similar to the distribution of accidents per unit total distance of vehicle travel (the accident rate). Results support a view that driving is a self-paced task governed by the level of emotional tension or anxiety which the driver wishes to tolerate. The possible effects of this on the distribution of accidents is discussed.

Search terms: Driving conditions; Road conditions; Driving experience\*; Accident rates; Stress conditions; Risk taking\*; Galvanic skin response\*; Emotions\*; Psychological factors

#### HS-005 836 Fld. 3/4

##### AUTO DRIVER FITNESS: AN EVALUATION OF USEFUL CRITERIA

by John L. Benton; Lloyd Mills, Jr.; Ken Hartman; James T. Crow

Published in *Journal of the American Medical Assoc.* v176 n5 p419-23 (6 May 1961) 16 refs

The drivers of an amateur sports car racing club were studied in an attempt to evaluate various approaches to the problem of picking out unsafe drivers. While observed behavior on the race courses had an interesting role in predicting how ultimately good a driver's race department became, it did not accurately predict which drivers would actually become involved in accidents. The testing of psychological traits, as revealed by suitable tests, had considerable value in distinguishing safe from unsafe drivers. Physical conditions, visual abilities, and reaction times, granted exclusion of gross defects inimicable with the

#### HS-005 756 Fld. 3/4

##### RIGHT OF WAY--SOME PRELIMINARY INVESTIGATIONS

by Wendy A. McGill

Published in *Australian Road Research* v3 n7 p25-38 (Sep 1968)

This report describes two related investigations. The first was an examination of knowledge and opinion of right of way laws and situations among a small group of Melbourne and Sydney drivers. The second part consisted of observations of right of way behavior at 16 uncontrolled T-junctions and three intersections in Melbourne.

Search terms: Interviews\*; Right-of-way (Traffic rules)\*; Australia\*; Driver behavior; Intersections; Driver attitudes; Traffic laws

#### HS-005 797 Fld. 3/4

##### EFFECTS OF FATIGUE ON PERFORMANCE [ABRIDGMENT]

by Truman M. Mast; Howard V. Jones; Norman W. Heimstra

Published in *Highway Research Record* n122 p93 (1966)

### 3/4 Driver Behavior (Cont.)

#### HS-005 836 (Cont.)

operation of a motor vehicle, had no readily detectable effects on driving ability, race deportment, or involvement in accidents on the race course. The experienced drivers were involved in accidents as frequently as inexperienced drivers.

Search terms: Racing automobiles; Driver behavior; Driver performance; Accident data; Driver physical fitness; Medical examination; Peripheral vision; Visual acuity\*; Visual fields\*; Color blindness\*; Driver attitudes; Depth perception\*; Reaction time; Psychological factors; Accident records; Accident rates; Reckless driving; Driving experience\*; Accident proneness

#### HS-005 837 Fld. 3/4; 1/3; 3/1

### AUTOMOBILE ACCIDENTS, SUICIDE AND UNCONSCIOUS MOTIVATION

by Melvin L. Selzer; Charles E. Payne

Published in *American Journal of Psychiatry* v119 n3 p237-40 (Sep 1962) 15 refs

This investigation using 60 male psychiatric patients points toward the possibility that unconscious self-destructive impulses, sometimes abetted by alcohol, are a major although covert factor in the etiology of certain automobile accidents.

Search terms: Mental illness; Suicide\*; Alcoholism; Accident causes; Psychological factors; Accident rates

#### IS-005 838 Fld. 3/4

### SOME EXPLORATORY RESEARCH ON RISK ACCEPTANCE IN A MAN-MACHINE SETTING

by Thomas H. Rockwell

Published in *Journal of the American Society of Safety Engineers* v7 n12 p23-9 (Dec 1962) 6 refs

A risk simulator for the experimental study of risk-taking was designed, fabricated, and built in accordance with an operationally defined risk-taking environment. Exploratory ex-

periments demonstrated that individuals can be differentiated with respect to the reactions to risk opportunities. Exact differences in measured performance using the proposed model permitted identification of extreme risk groups. The effects of experimental factors were also demonstrated in these initial results. Later the simulator was placed in an industrial environment and used on 37 workers. A two-way classification of risk a subjective estimate of the probability of task failure made by the worker and the concurrent objective risk measure derived from the simulator were used to describe the industrial sample. It was found that the high risk group had incurred more industrial accidents, were less skillful and possessed greater variability in task performance than the low risk group. The data further suggested that it may be necessary to ascertain sensory capabilities to distinguish those who prefer high risk choices to those who fail to correctly adjudge their own capabilities and the capabilities required by the task.

Search terms: Risk taking\*; Simulators; Accident data; Performance characteristics; Psychological factors; Man machine systems; Accident proneness

#### HS-005 851 Fld. 5/18; 3/4

### DEDUCTIONS FROM THE SPECTRA OF VEHICLE RESPONSE DUE TO ROAD PROFILE EXCITATION

by J. D. Robson

Published in *Journal of Sound and Vibration* v7 n2 156-8 (1968)

Under certain circumstances response of a vehicle may be considered as a function of a single displacement imposed by the roadway: spectra of road profile and of vehicle response at various speeds are then simply related. It is shown here that in such a case the establishment of response spectra at two known vehicle velocities makes possible the prediction of response spectra at other speeds, and also the deduction of the form of the road profile spectrum.

Search terms: Road conditions; Road surfaces; Speed; Performance characteristics; Stresses; Motor

vehicle dynamics; Motor vehicle handling; Mathematical analysis\*

#### HS-005 868 Fld. 3/4; 5/4; 2/4

### HUMAN FACTORS IN THE CONTROL OF ROAD VEHICLES

by I. D. Brown

Published in *Electronics & Power* v14 p275-9 (Jul 1968)

Human factors are the main cause of accidents. Major safety improvements can be made only if vehicle manufacturers and transportation administrators achieve an acceptable match between the characteristics of man, machine, and environment. The design of the driver's control instruments, the ability to judge speed, risk taking behavior, driver intoxication, road signs, problem drivers, and automatic guidance of cars are discussed.

Search terms: Human factors engineering; Man machine systems; Accident causes; Highway safety; Environmental factors; Instrument panels; Automobile design; Safety design; Speed; Risk taking\*; Driver intoxication; Drinking drivers; Signs (displays); Problem drivers; Automatically guided automobiles; Highway signs

#### HS-005 869 Fld. 3/4; 3/9

### THE SLEEPY DRIVER

by Robert E. Yoss; David D. Daly

Published in *Police* v13 n4 p6-10 (Mar-Apr 1969) 9 refs

The problem of narcolepsy is examined in relation to driving and other activities. Persons who fall asleep or become drowsy whenever they are driving cannot be safe drivers. Narcolepsy can be successfully treated and most of these persons can be alert drivers. Some cases are described. The normal sleep pattern and its variations are outlined.

Search terms: Sleep\*; Narcolepsy\*; Driving tasks; Case reports\*; Driver physical fitness

#### HS-005 870 Fld. 3/4

### TIMESHARING BETWEEN TWO DRIVING TASKS: SIMULATED STEERING AND RECOGNITION OF ROAD SIGNS

### 3/4 Driver Behavior (Cont.)

#### HS-005-870 (Cont.)

by Burton W. Stephens; Richard M. Michaels

Published in *Public Roads* v33 n5 p81-8 (Dec 1964) 17 refs

Presented at the 43d annual meeting of the Highway Research Board, Washington, D.C., Jan. 1964.

The reported study was designed to determine general driver ability to steer a vehicle while simultaneously searching for a specific sign and to measure the timesharing basis used in performing the two tasks. Analysis of individual timeshared trials indicated that performance on each of the two tasks is essentially independent. The performance of test operators deteriorated when the tasks were shared.

Search terms: Highway signs; Laboratory tests; Driving tasks; Automobile simulators; Driving simulation; Steering (driving); Signs (displays); Visual perception; Time sharing\*; Depth perception\*; Driver performance studies; Tracking curves\*; Variance analysis\*

#### HS-005 927 Fld. 5/0; 3/4

##### DRIVING SIMULATOR

by Randall E. Beinke; Jerry K. Williams

General Motors Corp., Detroit, Mich.  
7p

A good understanding of driver behavior and reactions in emergency and panic situations is needed. A program of testing average drivers in emergency situations pointed up the need for a driving simulator in which such tests could be conducted without risk to the subject. Design of such a simulator is described.

Search terms: Driving simulation; Driver behavior; Driver tests; Reactions (physiology); Automobile simulators\*

AVAILABILITY: Paper 24 in General Motors Proving Ground, PROC. OF AUTOMOTIVE SAFETY SEMINAR, 11-12 Jul 1968 (HS 005 901)

#### HS-005 967 Fld. 3/4

##### DRIVER BEHAVIOR: CAUSE AND EFFECT. PROCEEDINGS OF THE SECOND ANNUAL TRAFFIC SAFETY RESEARCH SYMPOSIUM OF THE AUTOMOBILE INSURANCE INDUSTRY, NORTHBROOK, ILLINOIS

by James O'Day, ed.

Insurance Inst. for Highway Safety, Washington, D.C.

19-21 Mar 1968 333p

Prepared in cooperation with Michigan Univ. Highway Safety Research Inst.

Thirteen papers analyzed separately examine various aspects of the driver behavior problem and the research being done on it.

Search terms: Highway safety; Driver behavior; Conferences\*

AVAILABILITY: Corporate author (Includes HS-005 968 to HS-005 980)

#### HS-005 968 Fld. 3/4; 2/0

##### THE NATIONAL HIGHWAY SAFETY PROGRAM—18 MONTHS LATER

by William Haddon, Jr.

National Highway Safety Bureau, Washington, D.C.

Outlines the highway safety problem. Discusses the high accident rate and public indifference to it, the lack of simple solutions, and the need for better highway and vehicle design.

Search terms: Highway safety; Public opinion; Accident rates; Highway design; Motor vehicle design

AVAILABILITY: In Insurance Inst. for Highway Safety, *Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p13-8 (HS-005967)

#### HS-005 969 Fld. 3/4; 2/0

##### NATIONAL GOALS AND PRIORITIES IN HIGHWAY SAFETY

by Sterling T. Tooker

Travelers Insurance Companies, Hartford, Conn.

Presents five priorities: interim action to contain the rise in incidence and costs of auto accidents; evolution of long-term goals; alternative plans by which long-term goals can be accomplished; development of funds necessary to implement changes; and the implementation of the program with the support of the community and the public.

Search terms: Accident rates; Costs\*; Highway safety; Safety programs; Community support; Public opinion

AVAILABILITY: In Insurance Inst. for Highway Safety, *Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p19-25 (HS-005967)

#### HS-005 970 Fld. 3/4; 4/8

##### THE ROLE OF THE AUTOMOBILE IN THE FUTURE TRANSPORTATION SYSTEM

by Alan S. Boyd

Department of Transportation, Washington, D.C.

Discusses criticism of the auto as the primary American mode of transportation. Predicts that it will continue to dominate American transportation as long as people can afford it but will be increasingly supplemented by mass transit, especially in central business districts. Includes discussion of the auto insurance problem.

Search terms: Mass transportation; Central business districts; Insurance industry\*; Automobiles; Transportation planning; Economic factors

AVAILABILITY: In Insurance Inst. for Highway Safety, *Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p31-7 (HS-005967)

#### HS-005 971 Fld. 3/4; 3/1

##### ALCOHOL AND THE BRITISH DRIVER

by Anthony Grant

England. Parliament, London

Explains the provisions of the British Road Safety Act of 1967, how breath and blood analysis are made, and the legal procedures in charging drivers for drunk driving.

Search terms: Alcoholic beverages; Blood alcohol levels\*; Blood

### 3/4 Driver Behavior (Cont.)

HS-005-971 (Cont.)

analysis\*; Breath analysis\*; Drinking drivers; Driver intoxication; Great Britain\*; Road Safety Act of 1967 (Great Britain)\*; Legal factors

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p39-49 (HS-005967)

HS-005 972 Fld. 3/4; 2/0

### RESEARCH AND HIGHWAY SAFETY

by Frederick Seitz

National Academy of Sciences—National Research Council, Washington, D.C.

Outlines the interest of the National Academy of Sciences in the highway safety problem.

Search terms: Highway safety; Safety research; National Academy of Sciences\*

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p51-3 (HS-005967)

HS-005 973 Fld. 3/4; 4/2

### SAFETY MEETS THE MEDIA. A PRESS FORUM

by Merrill Mueller

Discussion includes the drinking driver problem, the public's attitude of indifference to high accident rates, the use of governors to limit speed, roadside hazards, and various aspects of driver behavior.

Search terms: Mass media\*; Highway safety; Drinking drivers; Driver intoxication; Public opinion; Accident rates; Speed regulators\*; Driver behavior; Hazards; Highway design

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p55-75 (HS-005967)

S-005 974 Fld. 3/4; 4/5

### SYSTEMS ANALYSIS AND THE DRIVER

by James O'Day

Michigan Univ., Ann Arbor. Highway Safety Research Information Center

7 refs

Discusses the use of systems analysis and mathematical models to analyze the problems of traffic, driver behavior, highway safety.

Search terms: Systems analysis; Mathematical models; Driver behavior; Highway safety; Safety research; Traffic research

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p83-99 (HS-005967)

HS-005 975 Fld. 3/4

### DRIVER MOTIVATIONS AND ATTITUDES

by Donald C. Pelz

Michigan Univ., Ann Arbor. Survey Research Center

30 refs

An examination of why some drivers are more dangerous than others and what can be done to improve driving behavior. Discusses emotions, interpersonal relationships, and needs of individuals, along with life situations affecting these factors, and suggests what these motivations imply for safe driving programs. Discusses especially the high mortality rate among young male drivers.

Search terms: Driver behavior; Driver attitudes; Motivation studies; Sex factor in accidents; Age factor in accidents; Young adult drivers\*; Adolescent drivers; Emotions\*; Psychological factors; Accident rates; Fatalities; Safety programs; Driver improvement; Problem drivers

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p101-22 (HS-005967)

HS-005 976 Fld. 3/4

### DRIVING AS A SKILLED PERFORMANCE

by George E. Briggs

Ohio State Univ., Columbus. Human Performance Center

9 refs

Discusses the basic capacities and limitations of the driver and reports on the research methodologies that have been developed to define them. The driver is studied as an information processor and control element in the automobile-road system. Includes driver simulators, decision making, driver vision.

Search terms: Driver skills; Driver-vehicle interface; Decision making\*; Driving simulation; Vision; Driver characteristics; Eye movement

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p123-43 (HS-005967)

HS-005 977 Fld. 3/4; 3/1

### ALCOHOL AND PROBLEMS OF HIGHWAY SAFETY. THE ROLE OF SOCIAL SCIENCE RESEARCH

by Selden D. Bacon

Rutgers—The State Univ., New Brunswick, N.J. Center of Alcohol Studies  
18 refs

Social science has done little directly related to the traffic accident-alcohol problem, although it has a methodology suitable to investigating the problem. There is considerable knowledge on the use of alcoholic beverages as a custom and a good deal of pathologic information about accidents. Work on the relationship of drinking and driving and on solutions to the problem is needed.

Search terms: Alcoholic beverages; Drinking drivers; Driver intoxication; Accident data; Sociological aspects; Highway safety; Traffic accidents; Accident investigation

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p145-164 (HS-005967)

HS-005 978 Fld. 3/4

### INFORMATION PROCESSING, DECISION MAKING, AND HIGHWAY SAFETY

by Ward Edwards

### 3/4 Driver Behavior (Cont.)

HS-005-978 (Cont.)

Outlines the modern psychological theory of decision making and suggests that people are not as much influenced by new information as they should be. Discusses the influence of driver judgments of value and probability on decision making, an area needing research. Suggests that the most important quantity to try to change is the reward for successful risky driving.

Search terms: Decision making\*; Highway safety; Psychological factors; Careless driving; Reckless driving; Drinking drivers; Driver intoxication; Probability theory\*; Risk taking\*

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p165-80 (HS-005967)

HS-005 979 Fld. 3/4

#### DRIVER BEHAVIOR AND LEGAL SANCTIONS. A STUDY OF DETERRENCE

by Roger C. Cramton

Michigan Univ., Ann Arbor  
58 refs

There is evidence that legal sanctions can influence human behavior through setting up norms and establishing fear to violate them. This kind of general deterrence is most effective in enforcement of parking regulations, but less effective in preventing moving violations and still less in preventing driving after drinking. In these cases there is less fear of apprehension. There is little information on the deterrent effect of potential civil liability. Insurance rates may be a greater deterrent. The rehabilitative effects of driver improvement programs and traffic courts are also questionable.

Search terms: Legal factors; Psychological factors; Driver behavior; Parking; Careless driving; Driver intoxication; Drinking drivers; Insurance rates\*; Legal responsibility\*; Driver improvement; Traffic courts; Law enforcement\*; Traffic violations

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p181-216 (HS-005967)

HS-005 980 Fld. 3/4; 4/2

#### SOCIAL ROADBLOCKS IN UTILIZING HIGHWAY SAFETY RESEARCH

by Ronald G. Havelock

Michigan Univ., Ann Arbor. Center for Research on the Utilization of Scientific Knowledge

14 refs

Discusses the processes of knowledge dissemination and utilization in three ways--the natural process, the crisis approach which is sometimes faster, and the process of planned change. Outlines the ways in which highway safety knowledge is communicated to its potential audience and the difficulties of getting people to accept safety devices and safer driving practices.

Search terms: Highway safety; Sociological aspects; Psychological factors; Safety devices; Driver behavior; Safety propaganda; Community support

AVAILABILITY: *In Insurance Inst. for Highway Safety, Driver Behavior: Cause and Effect*, 19-21 Mar 1968, p217-45 (HS-005967)

HS-006 020 Fld. 3/4

#### PREDICTING DRIVING PERFORMANCE WITH A DRIVER SIMULATOR

by Alfred Crancer, Jr.

Washington. Dept. of Motor Vehicles, Olympia

Jul 1968 4p

The object of this research was to demonstrate the validity of a modified driver simulator as a device for driver testing. Driver errors were recorded in five test variables, speeding, steering, braking, accelerating, and signaling. Subjects were problem drivers and non problem drivers. Results showed an increase in errors associated with subjects having the poorer driving record.

Search terms: Driving simulation;

Driver tests; Driver performance studies; Speed studies; Steering (driving); Braking; Acceleration (physics); Problem drivers; Turn signals; Males\*; Young adult drivers\*

AVAILABILITY: Corporate author

HS-006 021 Fld. 3/4; 3/5

#### OREGON STUDY OF ADVISORY LETTERS: THE EFFECTIVENESS OF WARNING LETTERS IN DRIVER IMPROVEMENT

by Noel Kaestner; Edward J. Warmoth; Edward M. Syring

Oregon. Dept. of Motor Vehicles, Salem

Nov. 1965 19p

The effects of the form and content of driver improvement warning letters on subsequent driving records were studied. An analysis of subsequent violation and accident records revealed: 1. drivers sent the standard form letter had involvement records similar to those who received no letter whatsoever; 2. personalizing the standard form letter without changing a word resulted in significantly fewer traffic involvements for the first six months; 3. the personalized softsell letter had significantly fewer accidents and/or violations at the end of a full year; and 4. the driving superiority of the two personalized letter groups was primarily attributable to the improvement of the drivers under age 25.

Search terms: Driver records; Traffic violations; Accident data; Driver improvement; Age factor in driving; Sex factor in driving; Young adult drivers; Problem drivers; Driver attitudes; Advisory letters\*

AVAILABILITY: Corporate author

HS-006 022 Fld. 3/4

#### EVALUATION OF LABORATORY METHODS FOR THE STUDY OF DRIVER BEHAVIOR: THE RELATION BETWEEN SIMULATOR AND STREET PERFORMANCE. FINAL REPORT

by Dorothy S. Edwards; Clifford P. Hahn; Edwin A. Fleishman

### 3/4 Driver Behavior (Cont.)

HS-006-022 (Cont.)

American Institutes for Research,  
Silver Spring, Md.

May 1969 80p 8 refs  
Grant PH5-8R01-UI-00695  
Report no. AIR-E39-5/69-FR; R69-7

Formerly: Grant no. AC 00222.

This study of 304 taxi drivers was designed to compare on-the-road performance with their performance in a controlled laboratory setting on simulated driving tasks and driving related perceptual-motor tasks. On-the-street and simulator performance showed no correlation. Some significant relations between perceptual-motor performance and simulator performance were found. Age and driving experience were the most consistent predictors of simulator performance. Relations between officially recorded accidents and violations data and all performance measures used were low. Some significant predictors of certain classes of violations were achieved from road performance measures.

Search terms: Driver performance; Driving simulation; Automobile simulators; Age factors in driving; Driver behavior; Driver skills; Reaction time; Accident records; Traffic violations; Laboratory tests; Statistical analysis; Driving experience\*

AVAILABILITY: Corporate author

HS-006 023 Fld. 3/4

**A THEORY OF DRIVER MOTIVATION. "THE RESULTS OF STRUCTURED GROUP INTERVIEWS WITH SELECTED HIGH SCHOOL STUDENTS: VIRGINIA YOUTH AND TRAFFIC SAFETY". PHASE ONE**

by Wayne S. Ferguson; Kenneth E. Cook

Virginia. Highway Research Council,  
Charlottesville

May 1968 24p

The thinking of the majority in the student groups was as follows: 1. reason for wanting to drive was not purely a rational transportation

value in influencing behavior; 3. students attributed more poor driving habits to older drivers than to themselves; 4. speed should be related to driving conditions; 5. attitudes and law enforcement were two accident preventives offered; 6. highway signing and three-lane highways were the main highway problems identified by the discussants. The most striking feature of the student interviews was the candid discussion of their own ambivalence toward highway safety.

Search terms: Driver attitudes; Driver education; Age factor in driving; Traffic law enforcement; Speed; Driver behavior; Three lane highways\*; Highway signs; Highway safety; High school drivers; Adolescents\*; Group dynamics\*

AVAILABILITY: Corporate author

HS-006 024 Fld. 3/4; 3/5

**THE TEEN-AGED DRIVER: AN EVALUATION OF AGE, EXPERIENCE, DRIVING EXPOSURE AND DRIVER TRAINING AS THEY RELATE TO DRIVING RECORD**

by Ronald S. Coppin; Gareth S. Ferdun; Raymond C. Peck

California. Dept. of Motor Vehicles,  
Sacramento

Feb 1965 41p 6 refs  
Report no. 21

Findings in a study of driving records of 10,250 teen-agers follow: 1. exposure was more important than age in determining accident and violation rates, except for older males who had fewer accidents than younger males; 2. more experienced drivers, both male and female, had more violations; 3. no significant differences were found between groups completing behind-the-wheel driving training and groups who did not. Evidence to support a raise in the minimum licensing age in California was not found in terms of absolute risk. Relative risk approach pointed to the younger male's predisposition to accidents.

Search terms: Driving records; Age factor in driving; Age factor in accidents; Sex factor in driving; Sex factor in accidents; Traffic vio-

miles\*; Behind-the-wheel instruction\*; Driver license laws; Adolescent drivers\*; Young adult drivers\*; California\*

AVAILABILITY: Corporate author

HS-006 045 Fld. 1/3; 3/4

**ANALOGUE 1000**

by Robert K. Konkile

Published in *FBI Law Enforcement Bulletin* v38 n8 p12-6, 22 (Aug 1969)

An in depth study of 1000 fatal traffic accidents in Indiana was made to determine their causes. Analysis of the data compiled showed that accidents were related to: drugs including alcohol; educational level of driver; novice drivers; traffic law violations; vocational factors; careless drivers; suicides; and mechanical defects.

Search terms: Indiana\*; Fatalities; Environmental factors; Weather; Rural accidents; Drinking drivers; Age factor in accidents; Alcoholism; Drugs; Defective vehicles; Accident investigation; Suicide\*; Traffic safety; Careless driving; Accident data; Accident causes; Drinking drivers; Driver intoxication; Socioeconomic data; Adolescent drivers; Driving experience\*; Traffic violations

HS-006 049 Fld. 2/0; 3/4; 3/12

**DRIVER PASSING BEHAVIOR ON TWO-LANE HIGHWAYS**

by Robert S. Hostetter

HRB-Singer, Inc., State College, Pa.

The singular and combined effects of distance, speed, passing sight distance, and traffic volume on driver acceptance of passing opportunities as they occur on rural two-lane highways were determined. Results indicate that passing sight distance is the predominant variable influencing the passing decision.

Search terms: Two lane highways; Visibility; Driver behavior; Speed; Traffic volume; Passing (driving); Regression analysis\*; Variance analysis\*; Decision making\*; Rural highways; Gap acceptance\*

### 3/4 Driver Behavior (Cont.)

HS-006-049 (Cont.)

Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p39-60 (HS-006 046)

### HS-006 053 Fld. 2/0; 1/3; 3/4

#### MAPPING YOUNG DRIVERS IN BEHAVIORAL SPACE

by Stanley H. Schuman; Donald C. Pelz

Michigan Univ., Ann Arbor. Highway Safety Research Inst.

3 refs

Michigan data is presented on types of fatal accidents characteristic of young drivers. Drivers are grouped into six categories and their driving behavior and risk taking analyzed. Single car accidents are found to be characteristic of young male drivers.

Search terms: Age factor in accidents; Sex factor in accidents; Driver attitudes; Personality; Problem drivers; Driver behavior; Sociological aspects; Behavior analysis; Michigan\*; Young adult drivers\*; Risk taking\*; Single vehicle accidents; Fatalities; Psychological factors

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p141-54 (HS-006 046)

### HS-006 055 Fld 2/0; 3/4

#### RESPONSE BLOCKING: A NECESSARY PERFORMANCE CRITERION

by Warren H. Teichner

Harvard Univ., Boston Mass. Guggenheim Center for Aerospace Health and Safety

9 refs

The concept of response blocking is explained. It is an attentional process in high speed, continuous, decision-making tasks. Any interruption of the driving task by failure to respond increases the probability of accident. These lapses of attention are closely related to driver fatigue, sleep loss, reaction time, and emotional con-

dition. Response blocking is an inherent characteristic of human performance. Reaction times may be used to predict the probability of accident.

Search terms: Emotions\*; Psychological factors; Reaction time; Driver performance; Driving tasks; Forecasting\*; Accident risks; Driver fatigue; Decision making\*; Sleep\*; Human behavior; Driver behavior; Attention lapses\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p165-80 (HS-006 046)

### HS-006 070 Fld. 3/4; 2/9

#### WRONG WAY DRIVING

Anonymous

Published in *Traffic Safety* v65 n1 p10-1, 34-7 (Jan 1965)

A state-by state survey discusses the problems encountered on controlled access highways with drivers going the wrong way, often deliberately. Efforts being made to control this problem are chiefly by installation of additional signs.

Search terms: Driver behavior; Reckless driving; Controlled access highways; Highway signs; Wrong way\*; Directional signs

### HS-006 072 Fld. 3/5; 3/4

#### DEFENSIVE DRIVING—"FAIL SAFE" FOR PRO DRIVERS

by Alfred C. Finch

Published in *Traffic Safety* v64 n5 p16-7, 36-7 (May 1964)

Defensive driving skills are described as a combination of common sense, good judgement, and adequate training for the prompt identification of a hazardous driving situation and the taking of evasive action. This system of operation has been accepted by fleet drivers as a standard of professional driving performance and is considered the foundation for measuring and comparing driving records.

Search terms: Defensive driving\*; Driver skills; Driver behavior\*;

Accident prevention; Driver performance; Professional drivers; Driver improvement; Vision\*; Motor vehicle handling; Speed; Peripheral vision; Driver education

### HS-006 117 Fld. 3/4; 2/9

#### DRIVER JUDGMENT AND ERROR DURING THE AMBER PERIOD AT TRAFFIC LIGHTS

by A. Crawford

Published in *Ergonomics* v5 n4 p513-32 (Oct 1962) 13 refs

The behavior of a small group of drivers who took part in an experiment on stopping at traffic lights is described. Examination of the errors, hesitations, and changes of mind suggest that the distances in which 95 percent of the drivers stopped successfully might be used as a design parameter in the calculations of the minimum amber period for a traffic light.

Search terms: Traffic signals; Signal color; Mathematical analysis\*; Speed; Driving tasks; Stopping distance; Braking distance; Decision making\*; Driver performance; Driver behavior

### HS-006 118 Fld. 3/4; 4/7

#### COMPUTER MODEL OF CAR-DRIVER SEEN AS NEW WAY TO STUDY INTERSECTION SAFETY

by Edwin A. Kidd

Published in *Transportation Research Review* (First/Second Quarter 1969) p1-3

An instrumented car which can be driven in actual traffic situations was developed by Cornell Aeronautical Laboratory, Inc., to learn more about driver behavior at intersections. The theoretical model numerically describes in detail the driver's perceptual, decision-making, and response processes as he approaches, passes through and leaves an intersection controlled by various devices, and can predict intersection collisions. Factors affecting driver-vehicle behavior are also included. The greatest value of the computer model will lie in its utility as a tool for analyzing driver-vehicle-environment interactions in general.

### 3/4 Driver Behavior (Cont.)

HS-006-118 (Cont.)

Search terms: Computerized simulation; Intersections; Driver-vehicle interface; Mathematical models; Driver behavior; Careless driving; Environmental factors; Driving simulation; Gap acceptance\*

HS-006 130 Fld. 4/6; 3/4

#### USE OF PSYCHOLOGICAL INVENTORY IN WRITING INSURANCE FOR YOUTHFUL MALE DRIVERS

by Charles F. Haner

Published in *Traffic Safety Research Review* v7 n1 p5-9 (Mar 1963)

Insurance applicant's score on a psychological test is used to predict his accident rate and accident severity, and the premium set at a level commensurate with the risk he represents. The predictive validity of the psychological inventory is described. It seems statistically certain that the test can identify drivers likely to be negligent, to have serious injury accidents, and to have their licenses suspended or revoked. The test is based on identification of attitudes.

Search terms: Driver attitudes; Psychological tests; Accident rates; Accident severity; Insurance rates\*; Age factor in driving; Sex factor in driving; Negligence\*; Injury factors; Injury severity; Driver license suspension; Driver license revocation; Young adult drivers\*; Adolescent drivers; Forecasting

HS-006 131 Fld. 4/7; 3/4

#### MATHEMATICAL BIOLOGY OF LEARNING TO DRIVE AN AUTOMOBILE

by N. Rashevsky

Published in *Bulletin of Mathematical Biophysics* v25 p51-8 (1963) 10 refs

Discusses a driver's responses to stimuli when making small corrective turns to the right or to the left as the car comes too close to the edges of a lane. The problem can be reduced to a learning situation. The safe speed of a driver can be shown to depend on his total driving experience as well as on his psychophysical parameters.

Search terms: Driver behavior; Traffic lanes; Learning; Turning (direction change); Driving tasks; Reactions (physiology); Biomathematics\*; Mathematical analysis\*; Driving experience\*; Speed; Psychological factors; Decision making\*

HS-006 132 Fld. 4/7; 3/4

#### MATHEMATICAL BIOLOGY OF AUTOMOBILE DRIVING. 1. THE SHAPE OF THE TRACKING CURVE ON AN EMPTY STRAIGHT ROAD

by N. Rashevsky

Published in *Bulletin of Mathematical Biophysics* v26 p327-32 (1964) 10 refs

The keeping of the car close to the center of the lane is a problem of psychophysical discrimination between two conflicting stimuli. The conclusion derived is that a relation must exist between the threshold of discrimination, the sensitivity coefficient of the driver to changes in the distance between the car and the edge of the lane, and the width of the lane. General expressions are derived which characterize the stochastic nature of the tracking curve.

Search terms: Driver behavior; Traffic lanes; Driving tasks; Psychological factors; Tracking curves\*; Stochastic processes\*; Biomathematics\*; Mathematical analysis\*; Reactions (physiology); Decision making\*

HS-006 185 Fld. 3/4

#### THE "DRIVOMETER": AN OBJECTIVE DRIVER PERFORMANCE RATING INSTRUMENT

by Gerald J. Feddersen

Ford Motor Co., Dearborn, Mich. Traffic Safety and Highway Improvement Dept.

1963 14p

How the drivometer, an electro-mechanical device that can be used as an objective measurement of a person's overall driving ability, was instrumental in judging Detroit's 1963 "Good Driver of the Year" contest, is discussed. The instrument records four driver actions: steering

wheel reversals, accelerator reversals, speed changes, and brake applications, in addition to total time and running time of a trip.

Search terms: Driver performance; Detroit\*; Safety programs; Driver evaluation devices; Driver behavior; Motor vehicle handling; Steering (driving); Braking techniques; Speed patterns; Accelerator pedals\*; Driver skills

HS-006 186 Fld. 3/4

#### THE DEVELOPMENT OF AN INSTRUMENTATION SYSTEM TO MEASURE TRUE DRIVING PERFORMANCE

by John N. Snider; Thomas H. Rockwell

Published in *Traffic Safety and Research Review* v7 n3 p23-7 (Sep 1963)

Grant PHS-AC-28

A research program which attempts to quantify professional driver performance by measuring operator variance and comparing it with actual highway environment is discussed. The photographic instrumentation system allows driver performance to be recorded without the presence of an observer and without introducing other biases normally associated with driver performance research. The instrumentation system may also be applied to the study of traffic dynamics and highway design, and the information photographically recorded can provide useful data on driver behavior and factors affecting traffic flow.

Search terms: Driver performance studies; Driving tasks; Driver behavior; Traffic flow; Traffic dynamics; Cinematography\*; Professional drivers

HS-006 232 Fld. 3/4

#### AN INSTRUMENTED CAR FOR THE STUDY OF DRIVER BEHAVIOR

by John A. Michon; Gerard A. Koutstaal

Published in *American Psychologist* v24 n3 p297-300 (Mar 1969)

A Peugeot 404, fitted with a wide

### 3/4 Driver Behavior (Cont.)

HS-006-232 (Cont.)

range of experimental facilities and called ICARUS (Instrumented Car for Road User Studies), has developed into a general purpose driving laboratory. Elements which can be studied are: Lateral position in lane, vertical and lateral acceleration, distance traveled from origin, velocity, movements of steering wheel and options for other controls, eye and head movement, and other physiological and psychological indicators. A television camera, and tape recorder plus monitor, aid the study of the visual performance of the driver. Data obtained during driving are computer processed, decoded, and stored. The mechanical and electronic reliability of the system has been proven.

Search terms: Test equipment; Driver-vehicle interface; Acceleration (physics); Speed; Driver performance; Driver behavior; Vision; Eye movement; Steering (driving); Vehicle miles; Head movement; Tape recorders; Television systems; Data processing

HS-006 251 Fld. 5/0; 3/4; 4/7

#### VEHICLE HANDLING: MATHEMATICAL CHARACTERISTICS OF THE DRIVER

by T. B. Sheridan

Massachusetts Inst. of Tech., Cambridge

Jan 1963 25 refs

Report no. SAE-638B

Presented at SAE Automotive Engineering Congress, Detroit.

Recent mathematical descriptions of the human operator in control systems are reviewed. Available models are shown to have certain shortcomings when applied to automobile driving. It is proposed that "self-pacing" and "programmed-transient" behavior are requisite to satisfactory characterization of the driver.

Search terms: Mathematical models; Driving tasks; Driver behavior; Driving simulation; Driver-vehicle interface; Motor vehicle handling; Man machine systems; Human factors engineering; Human body simulation

AVAILABILITY: In Society of Automotive Engineers, HIGHWAY VEHICLE SAFETY, 1968, p268-76 (HS-006 239)

HS-006 252 Fld. 5/0; 2/9; 3/4

#### OBJECTIVE MEASUREMENTS OF DRIVER BEHAVIOR

by Bruce D. Greenshields; Fletcher N. Platt

Michigan Univ., Ann Arbor. Transportation Inst.; Ford Motor Co., Dearborn, Mich. Traffic Safety and Highway Improvement Dept.

Jan 1964 13 refs

Report no. SAE-640161 (809A)

Presented at SAE Automotive Engineering Congress, Detroit.

The development of an index of traffic flow is described, based on traffic density and volume, gasoline consumption, accident frequency. Equipment used to measure traffic flow is discussed. The application of this equipment to objective measurement of driver behavior, vehicle motion, and highway environment is described. This "drivometer" has been used to study driver education and performance, effects of fatigue, and driver classification.

Search terms: Measuring instruments; Driver behavior; Driver-vehicle interface; Traffic flow; Motion; Driver characteristics; Highway characteristics; Driving conditions; Mathematical analysis; Driver education; Traffic density; Traffic volume; Fuel consumption; Accident rates; Driver fatigue; Driver performance

AVAILABILITY: In Society of Automotive Engineers, HIGHWAY VEHICLE SAFETY, 1968, p277-89 (HS-006 239)

HS-006 290 Fld. 3/1; 3/4

#### THE EFFECTS OF ALCOHOL ON DECISION-MAKING WITH RESPECT TO TRAFFIC SIGNALS

by Everett M. Lewis, Jr.; Kiriako Sarlanis

Environmental Control Administration, Providence, R.I. Injury Control Research Lab.

Sep 1968 30p 11 refs

Report no. ICRL-RR-68-4

A study to determine whether the ability to perform simple driving tasks is impaired at blood alcohol of .05-.10%, and whether degree of impairment differs as a function of rising or falling blood alcohol curve is discussed. 20 subjects between 21 and 38 years of age were tested in a driving simulator for their ability to react appropriately to a traffic signal light. Runs were made at different speeds and at different blood alcohol levels. Results showed that the moderate blood alcohol level tested did significantly impair simple driving task performance, and that an identical blood alcohol level produced fewer errors on the descending curve than on the ascending one.

Search terms: Blood alcohol levels; Driver performance; Drinking drivers; Driving simulation; Traffic signals; Young adult drivers; Adult drivers; Reactions (physiology)

AVAILABILITY: Corporate author

HS-006 291 Fld. 3/4

#### EFFECT OF EXPOSURE TO A SAFETY POSTER ON THE FREQUENCY OF TURN SIGNALLING

by George W. Blomgren, Jr.; Thomas W. Scheuneman; James L. Wilkens

Published in *Traffic Safety and Research Review* v7 n1 p15-22 (Mar 1963) 18 refs

Relates traffic safety advertising to established psychological principles. This study reports an experiment with positive results. Drivers leaving a parking lot were confronted with a message. The sign induced approximately 6% more of total drivers in each category (men and women) to signal turns. Both before and after the sign, more women signalled than men and more left turns were signalled than right.

Search terms: Safety propaganda; Advertising; Parking lots; Driver behavior; Turn signals; Behavior analysis; Sex factor in driving; Turning left; Turning right

HS-006 292 Fld. 3/4

#### WHO ARE THE NEGLIGENT DRIVERS?

Anonymous

### 3/4 Driver Behavior (Cont.)

HS-006-292 (Cont.)

Published in *Current Medicine for Attorneys* v8 p39-42 (Nov 1961)

Varied opinions as to which class of people constitute the most careless drivers are mentioned. Groups criticized are women, because of lack of concentration, wearing of high heeled shoes, and driving barefooted; aged drivers because of physical unfitness and failure to keep informed on current traffic regulations and new techniques; doctors whose license plates make their driving errors noticeable; truck drivers who travel long distances without rest; individuals with very high or very low I.Q.'s; and persons who reject social customs.

Search terms: Careless driving; Problem drivers; Aged drivers; Sex factor in driving; Sociological aspects; Physicians; Truck drivers; Negligence; Accident factors; Driver behavior; Driver characteristics; Females; Driver physical fitness; Psychological factors

HS-006 293 Fld. 3/4; 5/20

#### DRIVE RIGHT: YOU'RE ON CANDID CAMERA

by George E. Bleuel

Published in *Traffic Safety* v69 n8 p8-10, 36 (Aug 1969)

The benefits of recording observations of driver behavior and incorrect performance on motion picture film and using the film for training and retraining purposes are evaluated. Types of camera, film, and projector used, and the method of mounting a camera in a car to photograph moving driver violations is explained in detail. Advantages of motion pictures over still photography when being used for accident investigation are discussed. The use of these techniques in a trucking company's safety program is outlined.

Search terms: Photography; Motion pictures; Accident investigation; Driver behavior; Driver performance; Accident reconstruction; Driver education; Traffic violations; Truck drivers; Safety programs; Fleets (motor vehicles)

HS-006 300 Fld. 3/6; 3/4

#### EVALUATION OF BRIEF FAMILY THERAPY FOR PROBLEM DRIVERS

by Donald H. Schuster

Iowa State Univ. of Science and Technology, Ames. Dept. of Psychology

Jul '1967 6p 7 refs

A comparison was made between the subsequent driving records of a group of 6 problem drivers who were given brief family group interview therapy, and a control group of 12 problem drivers who were given the standard one-hour interview with a highway patrolman. The past driving records of the two groups were comparable. The study took place in Iowa. One year later, no significant differences between the two groups appeared. A follow-up will be done three years later, but this technique does not seem promising.

Search terms: Driver improvement; Driver behavior; Problem drivers; Interviews; Iowa; Driver records

AVAILABILITY: Corporate author

HS-006 311 Fld. 4/7; 2/9; 3/4

#### CONTRIBUTION TO THE MATHEMATICAL BIOPHYSICS OF AUTOMOBILE DRIVING

by N. Rashevsky

Published in *Bulletin of Mathematical Biophysics* v23 p19-29 (1961)

Traffic in one direction on a multi-lane highway in heavy traffic is considered, and a general expression for the number of cars which pass a car travelling at a given velocity, as well as the number of cars which the given car passes, is derived for the case when the speeds of different cars are distributed in some arbitrary manner. Closed expressions are derived and discussed for a rectangular distribution. Each passing by another car or of another car is considered as a distracting stimulus which affects the reaction times of the driver. Using previously derived expressions for the safe speed as a function of reaction times, expressions for the safe average speed are derived, in terms of the volume of traffic and of the spread of the distribution of speeds.

Search terms: Passing (driving); Reaction time; Traffic volume; Traffic flow; Biomathematics; Speed patterns; Mathematical analysis; Driver behavior; Driving conditions; Biophysics

HS-006 329 Fld. 1/3; 3/4

#### A STUDY OF THE RELATIONSHIP OF TIME OF DAY TO MOTOR VEHICLE ACCIDENTS IN NORTH CAROLINA (1966-1968)

by Kersey Homi Antia

North Carolina Univ., Chapel Hill. Highway Safety Research Center  
1969 7p 9 refs  
Report no. HSRC-Bull-11

Accident risk is the least during the late morning and early afternoon hours and greatest during the late evening and early morning hours. Contributing factors may be alcohol usage, poor visibility, and fatigue during night time as well as the biological phenomenon of diurnal or circadian rhythm.

Search terms: Accident factors; Time factors; North Carolina; Accident rates; Night driving; Fatalities; Circadian rhythm; Accident risks; Driver physical fitness; Visibility; Driver fatigue; Drinking drivers

AVAILABILITY: Corporate author

HS-006 344 Fld. 3/2; 3/4

#### RESEARCH ACTIVITIES AT THE UCLA DRIVING SIMULATION LABORATORY

by S. Hulbert; C. Wojcik

Published in *Highway Research News* n17 p111-4 (Feb 1965) 6 refs

Presented at the 43rd annual meeting of the Highway Research Board.

The development and validation of a data system in driving simulation are described. Work on driver failure, driver fatigue, blood sugar levels, and wrong way driving on Los Angeles freeway ramps is outlined.

Search terms: Wrong way; Data processing; Automobile simulators; Driving simulation; Driver behavior; Driver fatigue; Blood sugar; Los Angeles; Ramps

### 3/4 Driver Behavior (Cont.)

HS-006 347 Fld. 3/4

#### AGGRESSION ON THE ROAD: A PILOT STUDY OF BEHAVIOUR IN THE DRIVING SITUATION

by Meyer H. Parry

1968 149p 26 refs

This British study uncovers information and attitudes regarding "aggression" and "anxiety" and determines what bearing, if any, these two factors may have on dangerous driving and on accident proneness. Findings indicate that driving tests should not only measure skill in car handling but should assess the suitability of candidates in other ways. Methodologies used in this study should be of value to others undertaking research in road safety.

Search terms: Accident proneness; Great Britain; Interviews; Accident factors; Driver behavior; Sex factor in driving; Accident causes; Statistical analysis; Behavior analysis; Psychological factors; Driver attitudes; Personality; Questionnaires; Accident data; Driver license standards; Risk Taking

AVAILABILITY: Barnes and Noble. New York, N.Y. (Published by Tavistock Publications, London England)

HS-006 348 Fld. 3/4

#### THE TEENAGER AND SAFE DRIVING

by Garnet M. Griffin

1968 159p

Teenagers should be the best drivers on the road since they have sharper vision and hearing, fast reflexes, and manipulative abilities. The hard fact is that drivers under 25, who comprise 20% of the licensed driver population, were involved in more than 33% of the country's fatal accidents. Driver education, traffic laws, defensive driving, driver attitude, speed, violations that cause accidents, drinking, night and winter driving, freeway driving, and motorcycles are covered in chapters of this book.

Search terms: Accident preven-

tion; Driver education; Traffic laws; Unsafe speed; Driver attitudes; Drinking drivers; Defensive driving; Motorcycles; Age factor in accidents; Adolescent drivers; Accident rates; Reaction time; Traffic violations; Night driving; Winter; Freeways; Driver skills

HS-006 358 Fld. 3/12; 3/4

#### HOW TO USE YOUR EYES WHEN YOU DRIVE

by R. Cartwright Hicks

Published in *Supervisory Management* v14 n4 p21-4 (Apr 1969)

Over 70% of accidents occur under safe driving conditions. One reason may be that drivers fail to see. Five basic seeing habits for safe driving are discussed: aim high in steering; get the big picture, looking in several directions; keep your eyes moving; leave yourself an out so you will not be trapped; make sure pedestrians and other drivers can see you.

Search terms: Visual perception; Driver skills; Eye movement; Pedestrian safety; Driver behavior; Accident causes; Visibility; Defensive driving

HS-006 393 Fld. 3/4; 2/4

#### THE DESIGN OF THE VISUAL FIELD IN STREETS: THE VISUAL ENGINEER'S CONTRIBUTION

by J. M. Waldram

Published in *Illuminating Engineering Society. Transactions (London)* v31 n1 p7-26 (1966) 18 refs

Good visual design must consider the whole perspective of the scene and the relation of the components to the whole. Streets are used for so many conflicting activities that effective design of the visual field is not possible. The most serious problems in present streets arise from their use as markets, especially at night when road users are hindered by commercial lighting and signs. Suggestions for restricting advertising signs and improving traffic signs are made.

Search terms: Streets; Street lighting; Traffic signs; Signs (displays); Visibility; Urban planning; Pedestrians; Highway planning; Human factors engineering; Field of view

HS-006 394 Fld. 3/4

#### HUMAN ENGINEERING ANALYSIS AID TO SAFE DRIVING SOLUTIONS

by Richard Michaels; Burton W. Stephens

Published in *SAE Journal* v76 n6 p56-7 (Jun 1968)

To make driving safer, better knowledge is needed of the behavioral characteristics a driver uses to fulfill his driving function. In driving a man must perform almost the entire guidance control task: steering, absolute and relative velocity, and detection of obstacles to be avoided, or random changes. New ways of providing directional information to drivers are in the making involving communication directly into the vehicle with appropriate displays that will minimize the necessity for time sharing.

Search terms: Driver behavior; Driving tasks; Steering (driving); Accident prevention; Speed; Human factors engineering; Highway design; Motor vehicle handling; Decision making; Driver-vehicle interface; Motion perception

HS-006 395 Fld. 3/4

#### A CONTRIBUTION TO THE MATHEMATICAL BIOLOGY OF AUTOMOBILE DRIVING: 2. PASSING AS A CASE OF PSYCHO- PHYSICAL DISCRIMINATION

by N. Rashevsky

Published in *Bulletin of Mathematical Biophysics* v22 p263-7 (1960) 7 refs

The decision to pass or not to pass in view of an oncoming car is considered as a case of comparative judgment in which it must be decided whether or not there is time to pass safely. It is assumed that distracting stimuli tend to increase the standard deviation. On this basis an expression is derived which gives the probability of a collision accident in passing as a function of the distracting stimuli.

Search terms: Driver behavior; Time factors; Decision making; Collisions (accidents); Passing (driving); Statistical analysis; Biostatistics; Reactions (physiology); Psychophysical discrimination

### 3/4 Driver Behavior (Cont.)

HS-006 396 Fld. 3/4

#### AUTOMOBILE DRIVING AS PSYCHOPHYSICAL DISCRIMINATION

by N. Rashevsky

Published in *Bulletin of Mathematical Biophysics* v24 p319-25 (1962) 5 refs

The driver tries to keep the car in the center of the lane. If the car is too near the left edge, the driver makes a corrective right turn. If the car is too near the right edge, a corrective left turn is made. Formulas for these maneuvers are derived. The requirement that a corrective turn should be made before the car runs off the road leads to an expression for the maximum safe speed. Because of the transcendence of the equations involved, closed solutions cannot be obtained.

Search terms: Statistical analysis; Turning left; Turning right; Speed; Driver skills; Motor vehicle handling; Driving tasks; Driver-vehicle interface; Steering (driving); Psychophysical discrimination; Driver-road interface

HS-820 060 Fld. 3/4

#### HIGHWAY SAFETY PROGRAM PRIORITIES SEMINAR, FREDERICKSBURG, VIRGINIA, JULY 18-20, 1969. PROCEEDINGS, VOL. 6: DRIVER BEHAVIOR

National Highway Safety Bureau, Washington, D.C.

1969 84p 5 refs  
Report no. PB-186 273

The magnitude of the driver behavior problem is outlined. It includes driver skills, skill impairment, driver attitudes, driver licensing. Programs in driver behavior and research support effort for them are discussed. Programs include driver education, licensing, impairment, vision, enforcement, traffic laws, motorcycle safety, study of driver-vehicle and driver-environment interactions, safety campaigns, and other accident prevention efforts

Search terms: Driver behavior; Driver characteristics; Driver skills; Driver education; Driver licensing; Driver physical fitness; Vision; Law

enforcement; Traffic laws; Motorcycle safety; Accident prevention; Safety campaigns; Driver-vehicle interface; Environmental factors; Driver attitudes; National Highway Safety Bureau

AVAILABILITY: CFSTI as PB-186 273

HS-006 459 Fld. 3/4

#### HOW I TEACH DRIVER EDUCATION. DRIVER'S SIGN LANGUAGE

by Sam Marsh

Published in *Safety* v5 n4 p20-2 (Sep-Oct 1969)

Methods of courteous driver communication to other drivers by use of hand signals, lights, or horn, are suggested. The sign language informs others what course of action is to be taken. Also described are signals used to warn of approaching hazards, impending emergencies, distress signals, and tailgating.

Search terms: Driver behavior; Signal lights; Highway communication; Horns; Signals; Brake lights; Turn signals

HS-006 470 Fld. 3/12; 2/8; 2/9; 3/4

#### EFFECT OF POLICE SUPERVISION ON THE PERCEPTION OF TRAFFIC SIGNS AND DRIVING HABITS

by Matti Syvanen

Central Organisation for Traffic Safety in Finland, Helsinki (Finland)

1968 27p 11 refs  
Report no. TALJA-6

Bound with THE CONSPICUITY OF TRAFFIC SIGNS AND FACTORS AFFECTING IT, p35-57.

The effects of police supervision on driver perception of a traffic sign were studied. If a police car was parked near the traffic sign, drivers observed the car but only 29.2% observed the sign. If the car was parked further from the sign, 52% of drivers noticed the sign. Other aspects of the influence of police supervision on driver behavior are also discussed. Presence of a patrol car causes a decrease in poor driving habits.

Search terms: Police traffic ser-

vices; Finland; Driver behavior; Visual perception; Traffic signs; Traffic surveillance; Police cars; Careless driving

AVAILABILITY: Corporate author (Bound with HS-006 469)

HS-006 518 Fld. 3/4

#### A PROPOSED MODEL FOR THE DRIVER-VEHICLE SYSTEM: THE CAR-FOLLOWING PROBLEM

by E. P. Todorosiev; L. C. Barbosa

Published in *Traffic Engineering* v34 n6 p17-20 (Mar 1964) 5 refs

A simulator study of the car-following problem was conducted in order to obtain fundamental information about driver behavior. Phase plane techniques were used to analyze the simulator results and propose the action point model for the driver-vehicle system. The study is chiefly concerned with the experimental determination of the relative velocity threshold of a driver and the correlation of the velocity threshold with the action point model.

Search terms: Driver behavior; Speed; Car following; Automobile simulators; Driving simulation; Mathematical models; Driver-vehicle interface

HS-006 561 Fld. 2/9; 3/4

#### TRAFFIC STUDIES AT UNCONTROLLED INTERSECTIONS USING TIME-LAPSE CINEMATOGRAPHY

by R. White

Published in *Journal of Institution of Municipal Engineers* v93 n9 p312-18 (Sep 1966)

Distribution of time lags accepted and time lags and gaps rejected by drivers entering intersections is discussed. At least 80% of drivers require a gap of three seconds in city conditions when the average speed on the main road is below 30 mph. The range of values from minimum to the value acceptable to at least 85% of drivers might be taken as 11 seconds. The smaller ranges are applied to favorable conditions and the higher to the least favorable conditions of visibility and approach angle.

Search terms: Gap acceptance; Time factors; Intersections; Speed; Driver behavior; Driving conditions; Visibility; Cinematography; Mathematical analysis

### 3/4 Driver Behavior (Cont.)

HS-006 568 Fld. 2/9; 3/4

#### HUMAN FACTOR CONSIDERATIONS IN TRAFFIC FLOW THEORY

by T. W. Forbes

Published in *Highway Research Record* n15 p60-6 (1963) 14 refs

Many traffic flow theory formulations have been offered. Human factor considerations have been recognized in some but accorded a minor role in most. This paper proposes relationships based on experimental information from previous studies of traffic flow, developing mathematical relationships important for traffic flow theory. Kinds of driver response and psychological effects on driver response times are considered.

Search terms: Mathematical analysis; Traffic flows; Psychological factors; Time factors; Driver behavior; Reaction time

HS-006 578 Fld. 3/4

#### DRIVER BEHAVIOR AND SCORES ON THE MMPI

by Paul L. Brown; Ralph F. Berdie

Published in *Journal of Applied Psychology* v44 n1 p18-21 (1960)

A group of 993 men was administered the MMPI when they were freshmen in college. From four to six years after this, their driving records were investigated, and a very small but statistically significant relationship was observed between scores on the MMPI (Minnesota Multiphasic Personality Inventory) and the number of accidents and violations of these individuals. The small size of these relationships might be due to the existence of more than one kind of personality pattern related to poor driving. Knowledge of the kind of personality organization and motivation of a driver may be useful for purposes of both licensing and training drivers.

Search terms: Driver behavior; Accident rates; Traffic violations; Accident proneness; Driver attitudes; Driver performance studies; Personality; Problem drivers; Psychological tests; Driver records; Males

HS-006 579 Fld. 3/4

#### PERCEPTUAL ANALYSIS OF THE DRIVING TASK

by Lawrence E. Schlesinger; Miriam A. Safren

Published in *Highway Research Record* n84 p54-61 (1965) 12 refs

A unified and comprehensive model of the driving task, having practical and psychological validity, has been developed. The model specifies the critical tasks of driving, the skills to perform them, and objective measures of these skills. In the model, the major tasks for the driver are perceptual organization of a field of safe travel, a minimum stopping zone, and a comparison of these two fields. The driver's organization of these two fields is called the field-zone ratio. Measures of driving skill derived from the model include smoothness of driving, measured by speed and direction changes.

Search terms: Driver behavior; Driving tasks; Driver skills; Driver performance studies; Turning (direction change); Speed patterns; Psychological factors; Decision making; Stopping distance

HS-006 580 Fld. 3/4; 4/7

#### A SUBJECTIVE SCALE OF SPEED WHEN DRIVING A MOTOR VEHICLE

by G. G. Denton

Published in *Ergonomics* v9 n3 p203-10 (1966) 13 refs

An experiment is described which attempts to establish a subjective scale of speed such as that experienced by a driver. The subject is required to produce a speed which he thinks bears a given proportional relation to the standard speed presented. The time taken by subjects to change from one speed to another is also positively correlated with speed. A more suitable mathematical model is derived from the transformed data, from which it is possible to predict performance for sensation ratios other than those tested. Applications of the findings to the study of driver behavior, speeding offenses, and accident rates are given.

Search terms: Speed studies; Mathematical models; Time factors;

Accident rates; High speed; Traffic violations; Driver skills; Motion perception; Driver performance studies

HS-006 581 Fld. 3/4

#### AN EXPLORATORY STUDY OF THE INTERRELATIONS AMONG DRIVING ABILITY, DRIVING EXPOSURE, AND SOCIO-ECONOMIC STATUS OF LOW AVERAGE, AND HIGH INTELLIGENCE MALES

by Robert W. Gutshall; Charles Harper; Donald Burke

Published in *Exceptional Children* v35 n1 p43-7 (Sep 1968) 15 refs

Official driving records of educable mentally retarded individuals were compared with records of individuals with normal or above intelligence to study the relationship of intelligence and socioeconomic status to driving ability and driving habits. Generally, intelligence and socioeconomic status did appear to be influencing factors in the total number of violation points accumulated over a five year period. However, inspection and analysis of driving records indicated that subjects from high socioeconomic groups received more speeding violations than the low groups, and that low intelligence subjects had more points for violations, other than speeding, than the average and above average intelligence groups. The low intelligence group differed significantly from an average group on the factors of combined accidents and violations. However, the low intelligence group did not differ significantly from the high intelligence groups on these same factors.

Search terms: Driver records; Socioeconomic data; Violations; Accident data; Driver performance; Driver behavior; Speed studies; Intelligence; Males; Driver miles

HS-006 619 Fld. 3/4; 2/9

#### THE DRIVER AND TRAFFIC CONTROL DEVICES

by William R. Reilly; Donald L. Woods

Published in *Traffic Engineering* v37 n9 p49-52 (Jun 1967)

A multiple choice test was given to

### 3/4 Driver Behavior (Cont.)

HS-006-619 (Cont.)

280 persons in three groups, safety conference participants, high school students, and city employees, to measure driver comprehension of traffic control devices. It was concluded that drivers have a very limited knowledge of the intention of traffic signs and markings; that more information on traffic control devices should be included in driver education courses; that a pamphlet on the subject should be distributed at driver licensing bureaus; and that research is needed to eliminate poor devices and improve traffic controls and laws.

Search terms: Traffic control devices; Traffic signs; Traffic markings; Driver education; Traffic laws; High school drivers; Driver tests; Driver licensing

HS-006 688 Fld. 3/4; 3/5

#### THE NATURE OF THE PROBLEM DRIVER

by William A. Mann

Published in *Caldea Calendar* v13 n3 p9-10 (Mar 1966)

Presented at Driver Improvement School Conference, Michigan State University, Dec 15-18, 1965.

To set up guidelines for a driver improvement school, the characteristics of problem drivers should be examined. It is suggested that these drivers are involved in accidents because of their lack of knowledge, lack of attention, inadequate perception, personality traits. Recommendations for a driver improvement program are given, including materials to be taught, teaching methods, and teacher qualifications.

Search terms: Curricula; Problem drivers; Driver improvement schools; Instructors; Driver behavior; Accident causes; Driver skills; Psychological factors; Careless driving; Personality; Accident proneness

HS-006 689 Fld. 3/4

#### ANALYZING A WORK SITUATION FOR HAZARDS IN HUMAN PERFORMANCE

by Robert B. Miller

Published in *Journal of the American Society of Safety Engineers* v7 n12 p17-23 (Dec 1962)

The psychological variables involved in a man-machine system are human selection: the displays, controls, and environments of the work space; training; procedure design; and motivations, goals, and incentives. Errors may result from many of these factors. Human factors specialists attempt to determine conditions likely to cause error. Solutions for hazards must be balanced against the resources available and an estimate of the resulting reduction in risk and cost of the error. Examples of driver performance and driving hazards are discussed.

Search terms: Psychological factors; Man machine systems; Driver behavior; Human factors engineering; Accident risks; Hazards; Benefit cost analysis; Accident factors; Driving tasks; Driver performance

HS-006 740 Fld. 3/4

#### FIELD STUDY OF VIGILANCE UNDER HIGHWAY DRIVING CONDITIONS

by D. A. Dobbins; J. G. Tiedemann; D. M. Skordahl  
Army Personnel Research Office.  
Washington, D.C.

Dec 1961 51p 18 refs  
Report no. APRO-TRN-118; AD-279 540

The signal detection performance of army truck drivers was studied under road test conditions. In the present study, signal detection performance began at a high level, and stayed at a high level in spite of inhibitory factors present in the monitoring conditions—noise, vibration, long hours, boredom, and fatigue. The present findings support the contention that the rapid, severe decrement found in the passive monitoring of laboratory displays may be of limited generality. Human capabilities for many monitoring tasks can be seriously underestimated.

Search terms: Driving tasks; Psychological tests; Driver performance studies; Road tests; Truck drivers; Signals; Driver fatigue; Driver characteristics; Driving con-

ditions; Statistical analysis; Vibration; Motor vehicle noise; Vigilance

AVAILABILITY: CFSTI

HS-006 741 Fld. 3/4; 3/5

#### THE FIVE PARTS OF THE DRIVING JOB

by Chris Imhoff

Published in *Traffic Safety* v64 n6 p22-3, 37-9 (Jun 1964)

The qualities a good motor vehicle fleet driver should have are described. They are: ability to avoid accidents and traffic violations; avoidance of undue wear and tear on the truck; avoidance of schedule delays and bad public relations. A fleet driver training program should teach safe driving, traffic rules, smooth operation, schedule observance, and courtesy. A catalog of driver errors and faults is included.

Search terms: Truck drivers; Fleet driver training; Traffic violations; Driver behavior; Driver skills; Accident prevention; Time factors; Public relations; Fleets (motor vehicles); Careless driving

HS-006 742 Fld. 3/4

#### TO HIRE OR NOT TO HIRE

by Howard T. Walton

Published in *Traffic Safety* v64 n2 p24-5, 38-40 (Feb 1964)

The criteria used by a truck firm in analyzing the qualifications of driver applicants are discussed. Age, physical characteristics, education, marital status, previous employment and military service, financial and credit status, accident and violation records are considered. Comparison is made of these factors for the firm's 20 best and 20 worst drivers.

Search terms: Truck drivers; Driver skills; Age factor in driving; Driver physical fitness; Accident records; Traffic violations; Driver records; Driver performance studies; Financial responsibility; Sociological aspects; Marital status

HS-006 743 Fld. 3/4

#### AGE AND THE PROFESSIONAL DRIVER

by Robert P. Sim

### **3/4 Driver Behavior (Cont.)**

**HS-006-743 (Cont.)**

Published in *Traffic Safety* v64 n1  
p24-5, 42 (Jan 1964)

The relationship between age and driving ability of truck drivers is discussed. Age and experience are of positive value to the older fleet employee. Drivers aged 40, with ten years experience, have less than half as many accidents as younger, less experienced drivers. The important factor is not the chronological age but the functional age.

Search terms: Driver physical fitness; Truck drivers; Fleets (motor vehicles); Age factor in driving; Driver skills; Driving experience; Accident rates

**HS-006 744 Fld. 3/4**

#### **PROFILE OF A KILLER**

by Hugh Matthews

Published in *Traffic Safety* v64 n5  
p12-4 (May 1964)

The accident role of obsessive-compulsive, neurotic, psychotic, psychopathic, and physically handicapped drivers is discussed. Better traffic laws and better enforcement are needed. It is suggested that any driver is dangerous if traffic laws are not enforced.

Search terms: Driver behavior; Driver physical fitness; Handicapped drivers; Traffic laws; Traffic law enforcement; Mental illness; Psychological factors; Accident factors

**HS-006 745 Fld. 3/4**

#### **HOW GOOD A DRIVER ARE YOU?**

by John E. Gibson

Published in *Today's Health* v43 n5  
p34-6 (May 1965)

The effects of personality factors, age, physical handicaps, intelligence, and suicidal tendencies on driving ability are discussed.

Search terms: Driver skills; Driver physical fitness; Personality; Psychological factors; Accident proneness; Risk taking; Careless driving; Suicide; Age factor in driving; Handicapped drivers; Intelligence

**HS-006 746 Fld. 3/4**

#### **SIDEWAYS FOR SAFETY**

by Hamish Cardno

Published in *Motor* v136 n3509  
p33-6 (17 Sep 1969)

The driving skills used in auto rallying in Great Britain are described. Cornering, braking, and other control techniques are discussed.

Search terms: Driver skills; Cornering; Braking; Motor vehicle control; Great Britain; Driving tasks

**HS-006 747 Fld. 3/4**

#### **ZZZZ ZZZZ ZZZZ BY THE ROADSIDE**

by John De Pew

Published in *Traffic Safety* v64 n2  
p16-7, 35 (Feb 1964)

The truck driver's habit of parking on the side of high-speed highways to sleep is condemned as dangerous and illegal. The driver should get enough sleep so that he does not need to sleep "on the job." If a nap is absolutely necessary, he should leave his route, take an exit off the expressway, and find a place where parking is permitted and will not lead to rear-end collisions.

Search terms: Truck drivers; Driver behavior; Sleep; Parking; Rear end collisions; Controlled access highways; Traffic violations; Accident causes

### 3/5 DRIVER EDUCATION

HS-004 332 Fld. 3/5

#### COUNCIL HELPS KEEP YOU FROM KILLING YOURSELF

by Ray Brokaw

Published in *Journal of Medical Association of Georgia* v56 p474 (Nov 1967)

The Georgia Safety Council is a non-profit, non-political organization, supported by business, industry, private citizens. Concerned with all phases of safety, the council established a Driver Improvement Program; a Safety Library and plans to sponsor the Teen Age Traffic Safety Conference.

Search terms: Safety programs; Driver education; Highway safety; Accident prevention; Georgia

HS-004 333 Fld. 3/5

#### DO DRIVER TRAINING COURSES PRODUCE BETTER DRIVERS? AN ALTERNATIVE HYPOTHESIS

by J. William Asher

Published in *Traffic Safety Research Review* v12 n1 p2-6 (Mar 1968)

Seniors who took driver education courses are different from those who did not. Differences between the 2 groups were related to 11 variables clustered around academic knowledge and academically related activities, such as amount of foreign language, socioeconomic status, dates per week, etc. These variables are known to be related to frequency of automobile accident and traffic violations.

Search terms: Driver education; High school drivers; Psychological tests; Socioeconomic data

HS-004 356 Fld. 3/5

#### SELLING DEFENSIVE DRIVING

Chris Imhoff

National Safety Council, Chicago, Ill.  
Driver Improvement Program

Published in *Traffic Safety* v68 n11

p18-19, 37-38 (Nov 1968)

Describes the Defensive Driving Course, part of the National Safety Council's Driver Improvement Program. Course is designed for average adult motorist with no formal training in safe driving and takes eight hours of class time. 95% of those who enroll finish the course, and there is some indication they have fewer accidents after the training.

Search terms: Driver education; Driver characteristics; Accident prevention; Defensive driving

HS-810 037 Fld. 3/5

#### INCONCLUSIVE PROOFS OF PAYOFF IN DRIVER EDUCATION AND OTHER CRASH PREVENTION MEASURES

by Robert Brenner  
National Highway Safety Bureau, Washington, D. C.

3 Dec 1968 18p

Presented at the National Driver Education and Training Symposium, Institute for Educational Development, Oakbrook, Ill.

Driver education cannot be proved to reduce accidents. Since driver education programs have to compete for money with other safety programs, research should be done to see if its value can be proved.

Search terms: Accident prevention, Costs, Driver education, Highway safety, Safety programs

AVAILABILITY: NUS

HS-004 485 Fld. 3/5

#### SUBJECTIVE AND OBJECTIVE COMPARISONS OF SUCCESSFUL AND UNSUCCESSFUL TRAINEE DRIVERS

by I. D. Brown

Published in *Ergonomics* v9 n1 p49-56 (Jan 1966)

22 trainee bus drivers were tested at weekly intervals during 5 weeks' training.

Object was to compare scores of trainees who passed and failed driving test for public service vehicles. Passing was related to previous driving experience and to result of first two weeks progress. Relative merits of various methods of assessing driving potential are discussed.

Search terms: Driver education, Driver performance studies, Bus drivers, Student drivers

HS-004 545 Fld. 3/5

#### RESEARCH IN DRIVER IMPROVEMENT--THE STATE OF THE ART

by Noel Kaestner

Published in *Traffic Quarterly* v22 n4 p497-520 (Oct 1968)

Reviews research studies concerned with evaluating driver interviews. Control group procedures are preferred to before-after designs because regression toward the mean operates in the driver improvement process and because spontaneous behavioral changes occur with time. About half of all driver improvement cases are in their teens and early twenties, and their attitudes and skills improve with maturity. Outlines interview procedure; drivers being grouped by age, sex, severity of driving record.

Search terms: Driver education, Problem drivers, Driver behavior, Driver performance, Interviews, Age factor in driving, Sex factor in driving, Violators, Accident records, Adolescent drivers, Young adult drivers\*

HS-004 589 Fld. 3/5

#### 4-H DRIVES FOR BETTER DRIVERS

Anonymous

Published in *Highway User* p16-19 (Nov 1968)

### 3/5 Driver Education (Cont.)

#### HS-004-589 (Cont.)

4-H Clubs' automotive program, meant to supplement driver training in high schools, helps develop safe driving attitudes and skills. Program has support of government, industry, and local citizens.

Search terms: Driver education, Community support, Driver attitudes, Driver skills, Adolescent drivers, Safety programs, 4-H Clubs\*

HS-004 650 Fld. 3/5

HELP FROM HOME  
by Art Opfer

Published in Traffic Safety v69 n1 p22-3,40,42 (Jan 1969)

Wisconsin Department of Instruction Experiment whereby parents reinforce skills of students taught by driver education teachers. Parents provided at least two hours of home practice for every hour received at school. Parent-teacher meetings conducted. Project evaluated through questionnaires.

Search terms: Adolescent drivers, Community support, Driver education, Questionnaires\*, Wisconsin\*

HS-004 651 Fld. 3/5

POLICE DRIVER TRAINING  
PROGRAM PAYS OFF  
by A. F. Joy

Published in Law and Order v16 n11 p31-4 (Nov 1968)

Describes a driving course for police in a Los Angeles suburb. Police vehicle accident rate has been reduced 33%.

Search terms: Driver education, Police, Accident rates, Police cars

HS-004 680 Fld. 1/3,3/5

AMERICA'S NUMBER ONE  
EPIDEMIC  
by William D. Coleman

Published in Illinois Medical Journal v127 n2 p153-4 (Feb 1965)

Discusses the two approaches to highway safety: educating drivers and improving their attitudes, and designing safer cars. Information gained from various accident studies has already resulted in the introduction of safety features and design changes.

Search terms: Automobile accidents, Driver education, Driver attitudes, Motor vehicle design, Highway safety, Safety design, Accident research

HS-004 697 Fld. 3/5

DRIVER EDUCATION: BRIGHT  
LIGHT UNDER A BASKET  
by Robert E. Lewis

Published in American Motorist v37 n10 p18-9 (Feb 1969)

Rejects criticism of driver education programs (failure to prove accident reduction; mere mechanical training courses). Considers the goal in driver education programs to reflect a new concept: examination of what types of changes in driver behavior are possible within the context of high school exposure.

Search terms: Driver education, High school drivers, Safety programs, Driver attitudes

HS-004 698 Fld. 3/5

DRIVER TRAINING SCHOOLS  
Anonymous

Published in Fleet Owner v59 n4 p79-85,88-92 (Apr 1964)

Describes several schools for professional truck drivers. Trainees practice

with large trucks of various types, learn first aid, safety and good driving practices. Courses take six weeks of full time work, and standards are high.

Search terms: Truck drivers, Driver education, First aid, Safety measures, Driver skills, Professional drivers

HS-004 824 Fld. 3/5

DRIVING PROGRAM "REALLY REAL"  
by Luke Patrenella,  
Herman Kelly

Published in Texas Highways v16 n2 p1-7 (Feb 1969)

Relates the experience of a high school student in a driver education program which utilized a simulator. This is an electromechanical device designed to represent the driver compartment of an automobile.

Search terms: Driver education, Automobile simulators, High school drivers, Driving simulation

HS-004 824 Fld. 3/5

DRIVING PROGRAM "REALLY REAL"  
by Luke Patrenella,  
Herman Kelly

Published in Texas Highways v16 n2 p1-7 (Feb 1969)

Relates the experience of a high school student in a driver education program which utilized a simulator. This is an electromechanical device designed to represent the driver compartment of an automobile.

Search terms: Driver education, Automobile simulators, High school drivers, Driving simulation

HS-004 879 Fld. 3/5

HOW I TEACH DRIVER EDUCATION  
by Robert M. Mitten, Harlan Perry, Gary Bloomfield  
Published in Safety v5 n1 p13-5 (Jan-Feb 1969)

### 3/5 Driver Education (Cont.)

HS-004-879 (Cont.)

Three teachers' views on the teaching of driving are presented. Dr. Mitten suggests that the most important product of a driver education program is a better educated citizen, not just a better driver. Self-reliance, courtesy, courage, respect for law and order, and social consciousness should be taught in relation to driving. Mr. Perry suggests the use of a student log book to record each student's process and provide a personal touch. Mr. Bloomfield emphasizes the importance of dynamic classroom teaching.

Search terms: Driver education, Sociological aspects, Adolescent drivers

HS-005 025 Fld. 3/5,3/4

TV MIRRORS TRUE DRIVING PERFORMANCE  
by Alfred C. Finch

Published in *Traffic Safety* v68 n12 p10-2,34 (Dec 1968)

Closed circuit television (CCTV) can be used to improve driving performance; to aid new drivers and problem drivers; for mass retraining and upgrading of all drivers. Experiments designed to observe the driver in a moving vehicle under traffic conditions utilized both Sony and Panasonic systems.

Search terms: Television systems, Closed circuit television\*, Driver education, Driving tasks, Driver improvement, Driver behavior, Driving conditions

HS-005 173 Fld. 3/5

ARE YOU DOING THE WHOLE JOB?

by Norman Gesteland

Published in *Quarterly Journal of the California Driver Education Association* v15 n2 p13-4 (Jan 1968)

High school driver education courses should include night driving, since it is at night that teens do most of their driving and night accident rates are worse than in the daytime. Problems of reduced visibility, danger of tinted windshields and sunglasses, effects of smoking, fatigue, and alcohol should be stressed. Particular skills needed in night driving should be taught.

Search terms: Adolescent drivers; Night driving; Driver education; Visibility; Windshields; Smoking factor in driving; Driver fatigue; Drinking drivers; Alcoholic beverages; Driver skills; Accident rates; High school drivers

HS-800 111 Fld. 3/5

EVALUATION OF DRIVER EDUCATION AND TRAINING PROGRAMS

by Harry H. Harman; Dean W. Seibel; Michael Rosenfeld; Benjamin Shimberg

Highway Research Board, Washington, D.C. and Educational Testing Service, Princeton, N.J.

31 Mar 1969 125p  
Contract FH-11-6961; HRB-48-69-4  
Report no. PB-183 805

This study used the findings of 4 earlier reports to develop a plan for comparing and combining alternatives to suggested driver education evaluation instruments and related data. Evaluation criteria are projected for both a short-term approach (estimated cost at \$1,000,000) and a long-term approach (\$4-5,000,000).

Search terms: Driver education; Driving tasks; Systems analysis; Driver skills; Driver behavior; Driver tests; Performance characteristics; Data acquisition; Benefit cost analysis\*; Driver performance studies

AVAILABILITY: CFSTI as PB-183 805

HS-005 235 Fld. 3/5

WHERE SHOULD WE BE GOING IN DRIVER EDUCATION?

by Amos E. Neyhart

Published in *CALDEA Calendar* v15 n2 p7 (Jan 1968)

Presented at Los Angeles County Chapter, California Driver Education Association, Los Angeles, Calif. May 26, 1967

Outlines the preferable attitudes and qualities needed for driver education instructors to educate and train adolescents successfully.

Search terms: Driver education; Instructors; Adolescent drivers

HS-005 236 Fld. 3/5

HOW AN EXPERT TEACHES THE "PROS"

by Alfred C. Finch

Published in *Traffic Safety* v67 n12 p14-5, 34 (Dec 1967)

Fleet operators have discovered that traffic accidents can be prevented and that drivers can improve. Harold Smith's training program (the Smith System) of defensive driving is outlined.

Search terms: Fleets (motor vehicles); Driver improvement; Driver education; Safety programs; Defensive driving\*; Accident prevention

HS-800 119 Fld. 3/5

NATIONAL DRIVER EDUCATION AND TRAINING SYMPOSIA. PROCEEDINGS. PUBLIC AND NON-PUBLIC SCHOOLS, DECEMBER 1-4, 1968-COMMERCIAL DRIVING SCHOOLS, JANUARY 16-29, 1969

Institute for Educational Development, New York

1969 389p  
Contract FH-11-6942; FH-11-6947  
Report no. PB-184 014

The purposes of the symposia were to report the progress of driver education programs and to contribute to the effective implementation of research in this field to public and non-public schools. The scope of activities included presentations on the "state of the art" in driver education, the programs of the National Highway Safety Bureau, and the exchange of information between the bureau and the driver education community.

Search terms: Conference; Driver education; Commercial

### 3/5 Driver Education (Cont.)

HS-800-119 (Cont.)

driving schools\*; High school driving courses\*; State of the art studies; National Highway Safety Bureau\*; Driver education evaluation\*

AVAILABILITY: CFSTI as PB-184 014 (Includes HS-800 122 to HS-800 129; HS-800 131 to HS-800 146)

HS-800 122 Fld. 3/5

#### SUMMARY STATEMENT, DECEMBER SYMPOSIUM

by William E. Tarrant

National Highway Safety Bureau, Washington, D.C. National Highway Safety Inst.

Presents a review of the activity of the symposium. The progress of driver education programs is outlined.

Search terms: Driver education; Driver education evaluation\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969. p19-24 (HS-800 119)

HS-800 123 Fld. 3/5

#### SUMMARY STATEMENT, JANUARY SYMPOSIUM

by William E. Tarrant

National Highway Safety Bureau, Washington, D.C. National Highway Safety Inst.

This summary reviews highlights of the symposium. Driver education and the evaluation of driver education programs are discussed.

Search terms: Driver education; Driver education evaluation\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969. p25-33 (HS-800 119)

HS-800 124 Fld. 3/5; 1/3

#### INCONCLUSIVE PROOFS OF PAY-OFF IN DRIVER EDUCATION AND

### OTHER CRASH PREVENTION MEASURES

by Robert Brenner

National Highway Safety Bureau, Washington, D.C.

The Highway Safety Act requires that state highway safety programs include driver education. While driver education is considered necessary, it is difficult to prove that it is effective as an accident prevention measure. It has thus been assigned a lower priority than some measures which can be proved effective, because there is not enough money in the highway safety field to pursue all measures at the same time.

Search terms: Highway Safety Act of 1966\*; Highway safety; Safety programs; Driver education; Accident prevention; Benefit cost analysis\* State government; Driver education evaluation\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969. p45-55 (HS-800 119)

HS-800 125 Fld. 3/5

#### DRIVER EDUCATION AND THE COMMERCIAL DRIVING SCHOOL

by Robert Brenner

National Highway Safety Bureau, Washington, D.C.

The Highway Safety Act requires that state highway safety programs include driver education. It is difficult to prove that driver education is effective as an accident prevention measure, and it has thus been assigned a lower priority than some measures which can be proved effective. The role of commercial driver training schools is discussed, especially the need to evaluate their effectiveness scientifically.

Search terms: Highway Safety Act of 1966\*; Safety programs; State government; Highway safety; Driver education; Accident prevention; Benefit cost analysis\*; Commercial driving schools\*; Driver education evaluation\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND

TRAINING SYMPOSIA, 1969. p56-68 (HS-800 119)

HS-800 126 Fld. 3/5

#### SAFETY SPECIALIST MANPOWER FOR DRIVER EDUCATION

by Tommy L. Bertone

Booz, Allen, and Hamilton, Inc., Chicago, Ill.

Describes a study made for the National Highway Safety Bureau. The objectives were to identify the types of people needed in highway safety programs, to estimate the number needed from 1968 to 1977, and to establish criteria for their qualifications. The study is concerned with state government employees in the safety field, is organized in terms of the National Highway Safety Program Standards, and is based on interviews with state officials. The needs for safety specialists in driver education and the manpower requirements for this field are discussed.

Search terms: National Highway Safety Bureau\*; Highway safety; Safety programs; State government; Safety standards; Driver education; Manpower utilization\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969. p69-79 (HS-800 119)

HS-800 127 Fld. 3/5

#### EVALUATION OF DRIVER EDUCATION-TELLING IT AS IT IS

by Leon Brody

New York Univ., N.Y. Center for Safety

All tasks, including driving, must be learned. There are problems involved in fitting driver education into educational systems and improving the driver education programs. Present guidelines for driver education are largely subjective. The systems analysis technique is suggested. A technique for analyzing cost effectiveness of differing methods of driver education is given.

Search terms: Driver education; Systems analysis; Benefit cost analysis\*; Driver education evaluation\*

### 3/5 Driver Education (Cont.)

HS-800-127 (Cont.)

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p80-87 (HS-800 119)

HS-800 128 Fld. 3/5

#### PLANS FOR EVALUATING DRIVER TRAINING

by Leon Brody

New York Univ., N.Y. Center for Safety

Guidelines for evaluating the effectiveness of driver education in high schools and commercial driving schools are outlined. It cannot presently be proved that driver education has a significant favorable effect on driver performance.

Search terms: Driver education; Driver performance; Commercial driving schools\*; High school driving courses\*; Driver education evaluation\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p88-92 (HS-800 119)

HS-800 129 Fld. 3/5

#### PLAN FOR CRITICAL APPRAISAL OF DRIVER EDUCATION PROGRAMS

by Robert L. Chapman

Institute for Education Development, El Segundo, Calif.

The issues in driver education program evaluation are: what driver performance variables contribute to effective driving in the real world; how can performance on these variables be influenced; and what interventions to influence driver proficiency are feasible. Three different plans for evaluating driver education are presented, all of which should be used together: evaluating program characteristics, evaluating driver proficiency, and validating program effectiveness.

Search terms: Driver education; Driver performance; Variables\*

Driver skills; Driver education evaluation\*

AVAILABILITY: *In* its PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p93-106 (HS-800 119)

HS-800 131 Fld. 3/5

#### RESEARCH IN DRIVER EDUCATION

by John J. Conger

Colorado Univ., Denver

12 refs

Studies showing that drivers who took driver education courses have fewer accidents than drivers who did not take such courses may not be enough to prove the value of the

courses. Results from studies of the personality characteristics of students who take driver education and those who do not show significant differences. Adolescents with certain kinds of personality traits may be more likely both to take driver education and to drive safely.

Search terms: Driver education; High school driving courses\*; Accident rates; Adolescent drivers; Psychological tests; Psychological factors; Personality; Driver attitudes; Driver education evaluation\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p107-26 (HS-800 119)

HS-800 132 Fld. 3/5

#### MODERN LEARNING PRINCIPLES AND DRIVER EDUCATION

by Robert M. Gagne

California Univ., Berkeley

5 refs

Six categories of driving skills are outlined: moving the vehicle at low speeds, as for parking; road and highway driving; driving in traffic; turning and signaling; responding to emergencies properly; carrying out procedures which are legally prescribed, such as observing posted speed limits, yielding to traffic, stopping at red lights. Analysis is made of the ways in which these skills are learned.

Search terms: Driver skills; Driver education; Speed; Traffic laws; Turning (direction change); Signals; Emergencies\*; Parking

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p127-36 (HS-800 119)

HS-800 133 Fld. 3/5

#### TOWARD A COMPREHENSIVE PLAN FOR EVALUATION OF DRIVER EDUCATION AND TRAINING PROGRAMS

by Harry H. Harman

Educational Testing Service, Princeton, N.J.

Outlines the plans of four contractors for the National Highway Safety

### 3/5 Driver Education (Cont.)

HS-800-133 (Cont.)

Bureau. The development of operational evaluation instruments to assess the effectiveness of driver education involves two major phases: the evaluation instruments themselves and their use.

Search terms: National Highway Safety Bureau\*; Driver education; Driver education evaluation\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p137-46 (HS-800 119)

HS-800 134 Fld. 3/5

#### DRIVER EDUCATION TODAY AND TOMORROW

by Norman Key

National Education Assoc., Washington, D.C.

19 refs

Outlines the history, body of knowledge, program types, legislative and financial support for driver education. Predicts the future development of driver education, including contributions from the behavioral sciences, the implications of research, and possibilities of improving the learning environment.

Search terms: Driver education

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p147-60 (HS-800 119)

HS-800 135 Fld. 3/5

#### DRIVER EDUCATION AND TRAINING: EVALUATION REQUIREMENTS AND SUGGESTED PLANS

by William A. Lybrand

American Univ., Washington, D.C. Development Education and Training Research Inst.

A systems analysis framework toward driver education evaluation is dis-

ature on driver performance were compared for driving situations with different performance requirements. Students are then tested with simulators to evaluate their performance on these driving tasks and situations.

Search terms: Driver education; Driving tasks; Driver performance; Driving simulation; Automobile simulators; Accident data; Systems analysis; Driver education evaluation\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p161-78 (HS-800 119)

HS-800 136 Fld. 3/5

#### A SCHOOL ADMINISTRATOR VIEWS DRIVER TRAINING EVALUATION

by Sidney P. Marland, Jr.

Institute for Educational Development, New York

Summary of a talk giving points of conflict among board of education members regarding driver education. Suggests that schools offer driver education because "it sounds good" but that sound evidence is needed to show how good it really is.

Search terms: Driver education evaluation\*; Driver education; High school driving courses\*

AVAILABILITY: *In* its PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p179-80 (HS-800 119)

HS-800 137 Fld. 3/5

#### THE CASE FOR MULTIPLE STANDARDS IN DRIVER TRAINING

by Warren E. Rumsfield

Commercial driving schools and high school driving courses are compared. It is suggested that high school driver education is unsatisfactory because of the inadequate time for behind-the-wheel instruction. Extensive quotation is made from Dr. Edward Tenney's book, *The Highway Jungle*, suggesting that professional driving

Search terms: Behind-the-wheel instruction\*; Classroom driver instruction\*; Driver education; Driver education evaluation\*; High school driving courses\*; Commercial driving schools\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p181-94 (HS-800 119)

HS-800 138 Fld. 3/5; 2/0

#### THE MISSION, OBJECTIVES, ORGANIZATION, AND PROGRAMS OF THE NATIONAL HIGHWAY SAFETY BUREAU

by William E. Tarrants

National Highway Safety Bureau, Washington, D.C. National Highway Safety Inst.

Discusses the Highway Safety Act and National Traffic and Motor Vehicle Safety Act, the establishment of safety standards, the research carried on by the bureau and its contractors on many aspects of the highway safety problem.

Search terms: National Highway Safety Bureau\*; Highway safety; Highway Safety Act of 1966\*; Safety standards; Safety programs

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p195-235 (HS-800 119)

HS-800 139 Fld. 3/5

#### DRIVER EDUCATION AND TRAINING

by Gilbert E. Teal

Dunlap and Associates, Inc., Darien, Conn.

A plan for evaluating the effectiveness of driver education is discussed. It is desirable to determine the effect of 6 hours of behind-the-wheel instruction on driving efficiency. Results of a driver education study are discussed, and it is concluded that accident statistics cannot be meaningfully related to driver education and that many variables are

### 3/5 Driver Education (Cont.)

HS-800-139 (Cont.)

Search terms: Driver education; Driver education evaluation\*; Behind-the-wheel instruction\*; Accident data; Variables\*; High school driving courses\*

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p236-45 (HS-800 119)

HS-800 140 Fld. 3/5

#### THE SURVEY OF COMMERCIAL SCHOOLS

by Gilbert E. Teal

Dunlap and Associates, Inc., Darien, Conn.

A study was conducted to survey the commercial driving schools, the state legislation concerning them, the curricula and evaluation techniques they use, the sources of data on their programs, and to develop a data base for possible inclusion in the overall driver education evaluation scheme.

Search terms: Commercial driving schools\*; Driver education evaluation\*; Driver education; Curricula\*; Data acquisition; State government

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p246-71 (HS-800 119)

HS-800 141 Fld. 3/5

#### PROBLEMS OF THE COMMERCIAL DRIVING SCHOOLS

by H. B. Vinson

7 refs

Author claims that laws and regulations discriminate against commercial driving schools in favor of high school driving courses. For example, commercial schools must carry liability insurance while high schools do not; 91% of the cars used in high schools are furnished free by dealers; in some states commercial driving school teachers cannot give lessons on teen-age drivers unless they

have teaching certificates. Regulation of commercial driving schools under the highway safety program is also discussed.

Search terms: Federal control; Highway safety; Commercial driving schools\*; High school driving courses\*; Adolescent drivers; State government; Liability insurance\*; Regulations; Legislation; Driver education

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p272-87 (HS-800 119)

HS-800 142 Fld. 3/5; 5/4

#### THE HIGHWAY SYSTEMS RESEARCH CAR

by Fletcher N. Platt

Ford Motor Co., Dearborn, Mich. Traffic Safety and Highway Improvement Dept.

Describes a car developed by Ford, with electronic equipment, sensors, counters, and a steering wheel that picks up the driver's stress and pulse. Data are recorded on tape which is fed into a computer for analysis of important characteristics of the driver in controlling the car and the motions of the car on the road. The car can be used for evaluation of driver efficiency and validation of driver education program effectiveness.

Search terms: Driver behavior; Driver education evaluation\*; Driver performance; Electronic devices; Computers; Stress conditions; Heart rate\*; Steering wheels

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p339-43 (HS-800 119)

HS-800 143 Fld. 3/5

#### AN APPROACH TO DRIVER TRAINING

by Harold L. Smith

Smith (Harold) Driver Improvement Inst., Inc., San Diego, Calif.

Describes a defensive driving system with five rules: aim high in steering; get the big picture; keep your eyes moving; leave yourself an "out"; make sure they see you. These rules are known as the Smith System.

Search terms: Defensive driving\*; Driver education; Eye movement; Steering (driving); Motor vehicle handling; Visibility

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p344-46 (HS-800 119)

HS-800 144 Fld. 3/5

#### CLOSED CIRCUIT TELEVISION IN A MOBILE VEHICLE IN TRAFFIC

by Alfred C. Finch

National Safety Council, Chicago, Ill.

Describes a system for recording traffic action and driver reaction. The driving task and driving habits can be analyzed. A driver can be shown his errors and taught how to correct them. The equipment and its reliability are described.

Search terms: Driver behavior; Driving tasks; Driver education; Closed circuit television\*; Television systems; Traffic characteristics

AVAILABILITY: *In* Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p347-51 (HS-800 119)

HS-800 145 Fld. 3/5

#### STATE TESTS, RULES, AND REGULATIONS FOR COMMERCIAL SCHOOLS AND INSTRUCTORS

by John S. Woods; Thad Rarogiewicz; Richard Dootson

Variations in state regulations in Massachusetts, Ohio, and California in regard to driving schools are discussed.

Search terms: Commercial driving schools\*; State government; Regulations; Legislation; Driver education; Massachusetts\*; Ohio\*; California\*; Instructors

AVAILABILITY: *In* Inst. for Educa-

### 3/5 Driver Education (Cont.)

HS-800-145 (Cont.)

tional Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p352-56 (HS-800 119)

HS-800 146 Fld. 3/5

#### A PUBLIC-COMMERCIAL SCHOOL RELATIONSHIP

by Donald E. Bruggeman

In Ohio, public schools are permitted to contract with commercial driving schools to give behind-the-wheel instruction, while continuing to use certified teachers for the classroom phase of driver education courses.

Search terms: Classroom driver instruction\*; Driver education; Ohio\*; High school driving courses\*; Commercial driving schools\*

AVAILABILITY: In Inst. for Educational Development. PROC. NATL. DRIVER EDUCATION AND TRAINING SYMPOSIA, 1969, p357-8 (HS-800 119)

HS-005 283 Fld. 3/5

#### A HISTORY OF WASHINGTON'S GROUP DYNAMICS PROGRAMS

by Jean E. Wallace

Washington. Dept. of Motor Vehicles, Olympia

Apr 1969 49p 14 refs  
Report no. 020

A history of the use of group programs in the treatment of problem drivers in Washington State is presented. In spite of weaknesses, results showed an encouraging improvement after six months in the records of drivers who completed the group dynamics program compared to those who did not.

Search terms: Problem drivers; Driver improvement; Driver performance; Questionnaires\*; Group dynamics\*; Washington\*; Traffic violations; Driver records

AVAILABILITY: Corporate author

HS-005 358 Fld. 3/5; 5/3

#### A CONCEPT OF MOTORCYCLE EDUCATION

by Duane R. Johnson

Published in *Traffic Digest and Review* v17 n2 p12-5 (Feb 1969)

Suggests that motorcycle safety should be taught to all drivers, not just motorcyclists, since several studies indicate that auto drivers are generally at fault in auto-cycle accidents. Outlines the cyclist's riding task in traffic and how it differs from auto driver's.

Search terms: Motorcycle safety; Driver education; Motorcycle accidents; Driving tasks; Collisions (accidents); Automobile accidents

HS-005 359 Fld. 3/5

#### PARTNERS IN SAFETY. THE COMPANY PRESIDENT AND THE SAFETY DIRECTOR

by Mike Wardwell

Published in *Traffic Safety* v67 n11 p18-9, 35-6 (Nov 1967)

Outlines a 16-point safety program for motor vehicle fleets. While accident reduction is the major goal of safety programs, a company's insurance rating may measure its safety program more accurately.

Search terms: Safety programs; Fleets (motor vehicles); Fleet driver training; Accident prevention; Insurance rates\*; Driver education

HS-005 360 Fld. 3/5

#### DRIVER ED IN TEXAS. A STRUCTURE FOR INFLUENCING FUTURE DRIVERS

by Sara Jo Thompson; G. L. Peavy

Published in *Traffic Safety* v69 n5 p16-7, 35-6 (May 1969)

Describes the driver education program which is meant to reach all high school students at licensing age, some 200,000 per year. There are not enough certified teachers, and experiments are being made with use of teaching assistants in this program.

Search terms: High school driving courses\*; Driver education; Texas\*; Instructors

HS-005 361 Fld. 3/5

#### THE FALLACY OF THE "UNTRAINED DRIVER"

by Gerald J. Driessen

National Safety Council, Chicago, Ill  
Published in *Traffic Safety* v69 n3 p16-8, 35-6 (Mar 1969)

Errors in logic in driver education research are discussed. It is presently not possible to prove that driver education makes better drivers. Informal and formal driver training are discussed, and the importance of collision avoidance training is emphasized. It is suggested that most of the courses teach only how to drive and fail to emphasize safety.

Search terms: Driver education; Accident prevention; Defensive driving\*; Collisions (accidents); Safety measures

HS-005 406 Fld. 3/5

#### A COMPARISON OF PUBLIC AND PRIVATE DRIVER TRAINING COURSES

by Michael J. Rodell

Washington. Dept. of Motor Vehicles, Olympia

Apr 1969 8p 4 refs  
Report no. 023

Analysis of records of 521 drivers indicates that high school driver training courses are less effective than commercial driving schools in teaching safe driving. Male drivers trained in commercial schools had significantly fewer accidents and violations, and female drivers had a somewhat lower rate. It is concluded that the commercial driving school is probably better than high school training, but neither gives full experience. More of the class time should be spent on simulators.

Search terms: Classroom driver instruction\*; Driver education; Driver performance studies; High school driving courses\*; Commercial driving schools\*; Behind-the-wheel instruction\*; Driver records; Traffic violations; Accident rates; Automobile simulators; High school drivers; Sex factor in driving

AVAILABILITY: Corporate author

### 3/5 Driver Education (Cont.)

HS-005 407 Fld. 3/5

#### LET'S GO SKIDDING

Anonymous

Published in *Motor* (London) p41-2  
(16 Nov 1968)

Describes "skid pans," large circular pads where drivers can learn how to control skidding cars on wet surfaces. Lessons include both instruction and time at the wheel. It is suggested that every large town in Great Britain should provide this kind of training.

Search terms: Driver education; Wet skidding; Skidding; Great Britain\*; Driver skills; Skid pans\*; Behind-the-wheel instruction\*

HS-005 408 Fld. 3/5

#### IMPROVING THE PERFORMANCE OF LICENSED DRIVERS THROUGH EDUCATION. A SURVEY REPORT ON DRIVER IMPROVEMENT SCHOOLS

Automotive Safety Foundation, Washington, D.C.

1965 53p

Pertinent information on existing driver improvement schools has been compiled and presented in this study along with proposed guidelines and programs useful for establishing new schools or in reorganization of the existing schools to assure maximum effectiveness. Includes improvement for handicapped and low skill drivers as well as for traffic violators.

Search terms: Driver education; Driver improvement; Driver behavior; Problem drivers; Driver performance; Violators; Community support; Driver skills; Driver improvement schools\*; Handicapped drivers; Driver physical fitness

AVAILABILITY: Corporate author

HS-005 495 Fld. 3/5

#### INTELLIGENSENS OCH OLIKA PERSONLIGHETSDRAGS BETYDELSE FOER UNDERVISNINGEN I EN BILSKOLA. (THE SIGNIFICANCE OF THE INTELLIGENCE AND SOME PERSONALITY

#### FACTORS FOR THE EDUCATION IN A DRIVING SCHOOL)

by Anders Tallqvist

Central Organisation for Traffic Safety in Finland, Helsinki (Finland)

1966 60p 6 refs

Report no. TALJA-3

In Swedish. English summary.

Aim of this study was to find out if the training situation in a driving school car could be favorably influenced by matching personality traits of instructors and student drivers. The aim of the study was partly attained. The psychological tests used are outlined.

Search terms: Driver education; Instructors; Personality; Student drivers; Psychological tests; Psychological factors

AVAILABILITY: Corporate author, Iso Roobertinkatu 20, Helsinki 12

HS-810 080 Fld. 3/5

#### DRIVER EDUCATION AND THE COMMERCIAL DRIVING SCHOOL

by Robert Brenner

National Highway Safety Bureau, Washington, D.C.

28 Jan 1969 21p

Remarks to be delivered before National Driver Education and Training Symposium. Part II, Commercial Driver Training Schools, conducted by Institute for Educational Development.

Driver education must be able to compete for limited resources with other aspects of the highway safety program. Factual evidence of its value is needed. Since it is a crash prevention measure, its value is more difficult to prove than the value of other measures, such as seat belts. The need for research into the usefulness of driver education is outlined, including the role of commercial driving schools.

Search terms: Driver education; Benefit cost analysis\*; Accident prevention; Seat belts; Highway safety; Safety programs

AVAILABILITY: NHSB (Same as HS-800 125)

HS-005 556 Fld. 3/5; 1/3

#### GREATER TRAFFIC SAFETY: DIMENSIONS AND GUIDELINES

by Leon Brody

Published in *Safety* v4 n1 p20-1  
(Jan/Feb 1968)

Suggests that emphasis should be placed on the understanding of general principles of traffic flow and traffic accidents, rather than on isolated events. Discusses 18 points reflecting a logical approach to the accident problem. Many of the points deal with driver education.

Search terms: Accident prevention; Driver education; Traffic safety; Traffic accidents; Traffic flow

HS-005 582 Fld. 3/5

#### THE TELEPHONE-LECTURE AND DRIVER EDUCATION

by Robert L. Barlett

Published in *Safety* v4 n1 p15-7  
(Jan-Feb 1968)

A telephone hookup with loudspeakers and transmitters can be installed in a classroom and a consultant can address students and answer questions. The technique has proved useful in teaching driver and traffic safety education. A plan for organizing a telephone lecture is included.

Search terms: Telephones\*; Driver education; Classroom driver instruction\*; Traffic safety programs; Instructional materials\*

HS-005 583 Fld. 3/5

#### CAR SIMULATION SYSTEMS. SUMMARY OF A LITERATURE SURVEY

by B. H. Groenewald

Published in *Robot* n42 p14-7 (Feb-Mar 1969) 6 refs

Simulators are used in driver education for economy, safety, and research. Advantages and disadvantages of this method are listed, and psychological and technical aspects of learning to drive a car in this manner are discussed at length. It was concluded that a full program in driver education should have, in addition to simulator training, a dual-

### 3/5 Driver Education (Cont.)

HS-005-583 (Cont.)

control car on a driving range, dual-control car in traffic in a quiet area, and real car training in traffic.

Search terms: Driver education\*; Dual-control cars\*; Classroom driver instruction\*; Psychological factors; Behind-the-wheel instruction\*; Driving simulation

HS-005 633 Fld. 3/1; 3/5

#### DOES ALCOHOL EDUCATION BELONG IN A DRIVER EDUCATION PROGRAM?

by S. A. Abercrombie

Published in *Traffic Digest and Review* v12 n5 p6-10, 34-5 (May 1964)

High school students should be taught about alcohol in relation to driving. The practices of various states are surveyed, and the courses outlined. It is suggested that the older approach emphasizing the evils of alcoholism is ineffective with high school students and that a modern approach explaining how alcohol affects the human system is preferable. Guidelines for driver education teachers are given.

Search terms: High school drivers; Driver education; Alcoholism; Alcoholic beverages; Physiological effects\*; High school driving courses\*

HS-005 637 Fld. 3/4; 3/5

#### UNTRAINED DRIVER'S RECORD UNPREDICTABLE, BUT TRAINED ONE ALWAYS IS BETTER

by Fred E. Vanosdall

Published in *Traffic Digest and Review* v12 n1 p8,20-1 (Jan 1964)

Presented at a regional meeting of the National Assoc. of Fleet Administration, Nov. 21, 1963, Chicago.

Outlines the attitudes and skills that make a good driver, especially for a motor fleet. Analyzes the basic attitudes of bad drivers. Suggests that motor fleet companies should emphasize safety and should provide training in the basic principles of safe driving.

Search terms: Driver attitudes; Driver skills; Careless driving; Safety programs; Driver education; Fleets (motor vehicles); Psychological factors; Professional drivers; Driver records

HS-005 640 Fld. 3/4; 3/5

#### IN DEFENSE OF THE AUTOMOBILE...

by Leo Levine

Published in *Motor Trend* v21 n4 p48-51 (Apr 1969)

Reviews the development of the highway and traffic safety movement. Attempts to point out the principal cause of accidents and to suggest solutions. Suggests that inability of drivers to act quickly enough is the biggest problem, that drivers need to be taught defensive driving and accident avoidance procedures.

Search terms: Defensive driving\*; Driver behavior; Accident prevention; Highway safety; Traffic safety; Accident causes; Reaction time; Driver education; Skid pans\*

HS-005 641 Fld. 3/4; 3/5

#### FLEET DRIVERS NEED TRAINING TO COPE WITH UNUSUAL SITUATIONS

by J. Stannard Baker

Published in *Traffic Digest and Review* v12 n1 p9-11 (Jan 1964)

Presented at the 25th Annual Safety Meeting of the EBASCO Client Companies Oct. 30, 1963, Chicago.

Outlines a program for the training of public utility company drivers. Good drivers need knowledge, skills, and proper attitudes. Some aspects of good driving habits are discussed, such as speed control at the approach to corners and turns and ability to resist distractions.

Search terms: Driver education; Driver attitudes; Driver skills; Speed; Cornering; Turning (direction change); Fleets (motor vehicles); Professional drivers

HS-005 643 Fld. 3/5

#### DRIVER EDUCATION PAYS OFF

by Amos E. Neyhart

Published in *Traffic Digest and Review* v12 n4 p4-8 (Apr 1964)

Discusses the importance of driver education, especially for young drivers, and its role in reducing accidents. High school is the ideal place to teach beginning drivers. Standards for high school courses are outlined. Costs are discussed. Young drivers who complete courses get lower insurance rates.

Search terms: Driver education; Accident prevention; Adolescent drivers; Young adult drivers\*; Insurance rates\*; Costs\*; Standards; Instructors; High school driving courses\*

HS-005 644 Fld. 3/5; 3/4

#### USING DRIVERS TO TRAIN DRIVERS

by Dorothy Atkin

Published in *Fleet Owner* v61 n7 p100-4 (Jul 1966)

Describes a truck fleet's program in which regular union drivers were used to upgrade the skills of casual drivers and helpers. Emphasis was on improvement in driver attitudes and habits rather than discipline. Accident rate of the drivers trained has dropped 50%.

Search terms: Accident rates; Truck drivers; Driver attitudes; Driver skills; Driver improvement; Driver behavior; Accident prevention; Fleet driver training\*

HS-005 645 Fld. 3/6; 3/5

#### NEEDED: TRAINING FOR TRAFFIC PRO'S

by Arthur A. Tritsch

Published in *Traffic Safety* v69 n5 p22-3,39-40,42 (May 1969)

Discusses the need for training driver license examiners, driver improvement specialists, police, driver license clerks, motor vehicle inspection mechanics, and others connected with the traffic safety field. Points out the increasing needs for manpower in this field and outlines principles for training programs at all levels.

Search terms: Traffic safety; Manpower utilization\*; Education; Police; Driver license examiners;

### 3/5 Driver Education (Cont.)

HS-005-645 (Cont.)

Driver improvement; Driver licensing; Motor vehicle inspection

HS-005 694 Fid. 3/5

### WHAT'S AHEAD IN HIGHER EDUCATION?

by Bernard I. Loft

Published in *Traffic Safety* v69 n7 p26-7, 38-9 (Jul 1969)

The present and future role of colleges and universities in the training of traffic safety specialists, especially driver education teachers, is discussed.

Search terms: Driver education; Instructors; Traffic safety; Universities

HS-005 695 Fid. 3/5; 5/20

### THREE VIEWS: CAR VS. TRUCK FLEET SAFETY

by Tony Grey

Published in *Commercial Car Journal* v116 n6 p60-2 (Feb 1969)

Accident patterns for cars and trucks are different, as are effective ways of reaching the driver. The driver improvement programs of several corporations are described. They include defensive driving courses, review boards to analyze accidents, monthly safety promotion meetings.

Search terms: Safety programs; Driver improvement; Fleet driver training\*; Truck drivers; Defensive driving\*; Accident analysis

HS-005 696 Fid. 3/5

### COURT UPHOLDS POWER TO SENTENCE DRIVERS TO TRAFFIC SCHOOL

by Robert H. Reeder

Published in *Traffic Digest and Review* v13 n7 p18-9 (Jul 1965)

Defendant in California case argued that his constitutional rights were infringed by being ordered to attend traffic violators' school. Court upheld the sentence. In California, attending traffic school is part of the punishment, but in most states it is part of the probation.

Search terms: Driver improvement schools\*; California\*; Courts; Legal rights; Legal factors; Violators

HS-005 697 Fid. 3/5

### POLICE FLEET SAFETY: TRAINING AND DISCIPLINARY PRACTICES. PART 1

by Martin W. Johnson

Published in *Traffic Digest and Review* v13 n8 p4-8, 24 (Aug 1965)

A survey of 48 state agencies and 18 municipal departments has been made. It covers driver training for police recruits, the content of the training programs, police accidents, types of accident reports, and disciplinary practices for police involved in accidents. The need for a police driving safety program is outlined.

Search terms: Police; Fleets (motor vehicles); Safety programs; Driver education; Accident reports; Accident analysis; Safety programs; Fleet driver training\*; Police cars\*

HS-005 698 Fid. 3/5

### POLICE FLEET SAFETY: TRAINING AND DISCIPLINARY PRACTICES. PART 4

by Martin W. Johnson

Published in *Traffic Digest and Review* v13 n11 p10-4 (Nov 1965)

The training and disciplinary practices of 70 police departments are surveyed. Driver training and the development of proper attitudes are key points. About 70% of the departments use behind-the-wheel training; nearly all teach defensive driving and have accident review boards. Corrective discipline varies widely. Recommendations for police driver training are outlined. Awards for good driving performance are stressed.

Search terms: Police; Driver education; Defensive driving\*; Behind-the-wheel instruction\*; Driver attitudes; Accident analysis; Awards\*; Fleets (motor vehicles); Safety programs; Police cars\*; Costs\*; Accident prevention; Fleet driver training\*

HS-005 699 Fid. 3/5; 1/3

### POLICE FLEET SAFETY: TRAINING AND DISCIPLINARY PRACTICES. PART 3

by Martin W. Johnson

Published in *Traffic Digest and Review* v13 n10 p9-12 (Oct 1965)

A good accident record system is essential to a fleet safety program. A review board should analyze accidents and determine which ones should have been preventable and what action should be taken if a police driver was negligent. Careless handling of police cars is also discussed. Guidelines for determining the preventability of accidents are given.

Search terms: Police; Driver education; Accident analysis; Accident records; Negligence\*; Police cars\*; Fleets (motor vehicles); Safety programs; Careless driving; Accident prevention; Fleet driver training\*

HS-005 700 Fid. 3/5

### DRIVER INSTRUCTION-PUBLIC SCHOOL RESPONSIBILITY

by John R. Eales

Published in *California Journal of Traffic Safety Education* v16 n4 p27-8 (Jun 1969)

While driver education cannot be proved to reduce accidents, it is an important part of the school curriculum in a motorized society. Research is needed on how to improve it. It may be impossible to prove that driver education does or does not reduce accidents.

Search terms: High school driving courses\*; Driver education; Accident prevention

HS-005 701 Fid. 3/5

### A QUALITY PROGRAM FOR DRIVER EDUCATION

by Gerald R. Wallace

Published in *California Journal of Traffic Safety Education* v16 n4 p15, 22 (Jun 1969)

Presented to California Driver Education Association Conference, Monterey, Calif., Mar. 15, 1969.

### 3/5 Driver Education (Cont.)

HS-005-701 (Cont.)

Good teachers and a good driver education program in high schools are defined. It is suggested that three forces in American society should favor driver education: student demand for relevance in what they are taught, the assessment being carried on for effectiveness in teaching, and the effort to help disadvantaged children who will likely be more interested in cars than in academic subjects.

Search terms: High school driving courses\*; Driver education\*; Instructors; Sociological aspects

HS-005 702 Fld. 3/5

#### THE DRIVER EDUCATOR: COMMITMENT TO THE PROFESSION?

by Charles H. Hartman

Published in *California Journal of Traffic Safety Education* v16 n4 p13-4 (Jun 1969)

Presented to California Driver Education Association Conference, Monterey, Calif., Mar. 14, 1969.

High school driver education teachers are urged to take a professional attitude toward this task and improve the quality of instruction and effectiveness of the program.

Search terms: High school driving courses\*; Instructors; Driver education; Driver education evaluation\*

HS-005 757 Fld. 3/5

#### COPING WITH DRIVER FAILURE

by Merwyn A. Kraft

Published in *Police* v8 n6 p36-8 (Jul-Aug 1964)

Presented at Liberty Mutual Council on the Automobile and Public Health, Boston, Nov. 1963.

The seriousness of the highway safety problem is outlined. A solution suggested is corrective interviews with problem drivers. This technique is now employed by some transit companies which have reduced their accident rates. States should adopt the technique.

Search terms: Highway safety;

Problem drivers; Driver improvement; Interviews\*; Accident rates

HS-005 758 Fld. 3/6; 3/5

#### DRIVER LICENSING AND DRIVER EDUCATION

by Douglas Toms

Published in *Traffic Digest and Review* v17 n4 p15-7

An automated driver license knowledge testing system used in Washington is described. It is used to administer the knowledge examination for a driver license. Slides are used to present the person taking the test with real driving situations on which he must make a decision. The system would also be useful for driver improvement programs.

Search terms: Driver license examination; Driver tests; Driver improvement; Washington\*; Driving simulation; Visual aids\*; Driver education

HS-005 798 Fld. 3/5; 5/3

#### 'TIS A SHAME!

Anonymous

Published in *Air Force Driver* v2 n12 p12-5 (May 1969)

Describes the motorcycle driver training program of the Los Angeles Police Department. Each trainee must have at least three years on the force; in the course he receives at least 80 hours of controlled riding experience in addition to instruction. It is "a shame" that every motorcycle driver does not get a course of this kind.

Search terms: Motorcycle safety; Driver education; Police; Los Angeles\*; Driving experience\*

HS-005 839 Fld. 3/5

#### THE EFFECTIVENESS OF SHORT INDIVIDUAL DRIVER IMPROVEMENT SESSIONS

by R. S. Coppin; R. C. Peck; A. Lew; W. C. Marsh

California, Dept. of Motor Vehicles, Sacramento

Oct 1965 74p

Report no. 22

Prepared in cooperation with Div.

of Drivers Licenses, and Bureau of Public Roads, Washington, D.C.

Two groups of negligent drivers were studied. The group required to attend hearings had significantly fewer citations in the following year. The hearing group and control group showed no significant differences in accident frequency. It is concluded that individual hearings are effective in reducing citations, but not accidents, and that effects diminish with time.

Search terms: Driver improvement; Driver records; Accident prevention; Driver characteristics; Interviews\*; Problem drivers; Careless driving; Driver behavior; Traffic violations

HS-005 871 Fld. 3/5

#### GUIDANCE: THE ROLE OF COUNSELORS IN DRIVER EDUCATION

by Thomas J. Jacobson

Published in *Safety* v5 n3 p16-9 (May-Jun 1969) 8 refs

The field of guidance and counseling has much to contribute to the improvement of driver and safety education programs, and can be more effective if and when counselors become involved in action courses such as driver and safety education. Guidance counselors are challenged to find out what is going on in driver and safety education in their schools, and acquaint educators in this field with their available guidance services, such as analyzing test results, developing subjective anecdotal records concerning the individual student's behavior, and helping students to achieve attitudes favorable to safety.

Search terms: Driver education; Safety programs; Driver attitudes; High school driving courses\*; Driver behavior; Psychological factors

HS-005 873 Fld. 3/6; 1/3; 5/9; 3/5

#### THE NEED FOR TRAFFIC SAFETY LEGISLATION

by James E. Bassett

Published in *Police* v9 n5 p38-41 (May-June 1965)

Presented to American Association

### 3/5 Driver Education (Cont.)

HS-005-873 (Cont.)

for Automotive Medicine Conference, Oct. 1964.

The accident problem in Kentucky is outlined. The Driver Limitation Program is explained; medical advice will be sought concerning the licensing of special risk drivers, including the physically handicapped and those with chronic conditions and mental problems. A program for re-examining all drivers every four years needs to be developed, annual motor vehicle inspection made mandatory, driver education in high schools made available to all students, and the quality of traffic courts improved.

Search terms: Kentucky\*; Traffic safety programs; Driver physical fitness; Motor vehicle inspection; Driver education; Driver licensing; Accident prevention; Traffic courts; Handicapped drivers; Mental illness; Driver license examination; Medical advisory boards\*; High school driving courses\*; Traffic law enforcement; Accident rates

HS-005 881 Fld. 5/3; 3/5

#### WHAT ARE YOU DOING ABOUT MOTORCYCLE EDUCATION?

by Duane R. Johnson

Published in *Safety* v5 n3 p20-3 (May-Jun 1969)

Safety training in the field of motorcycle education is as important as driver education. Four tasks are deemed necessary to make this proposed high school program successful. They are national program guidelines, teacher preparation programs where needed, pilot programs, and the development of good audiovisuals. Statistics show a high incidence of motorcycle fatalities and injuries attributed to lack of formal training in this area.

Search terms: Motorcycle safety; Fatalities; Motorcycle accidents; Driver education; Costs\*; High school driving courses\*; Audiovisual aids

HS-005 928 Fld. 5/0; 3/5

#### TRAINING DRIVERS FOR

### EMERGENCIES

by Richard G. Hoffman; David R. McLellan; Alonzo H. Kelly, Jr.

General Motors Proving Ground, Milford, Mich.

4p

Describes an 8-hour training course consisting of classroom and behind-the-wheel instruction and discusses the subject material and teaching methods. Course teaches defensive driving techniques for accident avoidance and is meant for advanced driver training.

Search terms: Driver education; Defensive driving\*; Accident prevention; Driver improvement schools\*; Behind-the-wheel instruction\*

AVAILABILITY: Paper 25 in its PROC. OF AUTOMOTIVE SAFETY SEMINAR, 11-12 Jul 1968 (HS-005 901)

HS-810 082 Fld. 3/5

#### DRIVER EDUCATION FAILS TO MEET FULL OBJECTIVE

by William Haddon, Jr.

National Highway Safety Bureau, Washington, D.C.

Published in *Trial* v 4 n3 p48-9 (Apr-May 1968)

Highway accidents are the leading hazard in American life, and the driver education program may not meet its objective unless the states take drastic steps to educate youth to the full meaning of highway safety and the support of higher standards. Driver education has not been properly evaluated.

Search terms: Driver education; Driver education evaluation\*; Highway safety

HS-005 981 Fld. 3/5

#### A GROUP DISCUSSION MANUAL FOR IMPROVING THE ATTITUDE OF YOUNGER DRIVERS

by Barbara S. Marx; Lawrence E. Schlesinger

Published in *Traffic Digest and Review* v13 n5 p15-8 (May 1965)

Grant AC-00064

Events leading to the contents and publication of a group discussion manual (See HS-001 459) for traffic safety instructors to use in re-education programs with young violators are given. The purpose of the manual is to improve the attitudes and driving behavior of young drivers.

Search terms: Driver behavior; Young adult drivers\*; Age factors; Violators; Traffic safety programs; Driver improvement; Driver education; Problem drivers; Sociological aspects; Group dynamics\*; Driver improvement schools; Discussion groups\*

HS-820 040 Fld. 3/5

#### HIGHWAY SAFETY PROGRAM. VOLUME 4. DRIVER EDUCATION

National Highway Safety Bureau, Washington, D.C.

Jan 1969 46p 19 refs

One of 17 volumes, two of which (vols. 12 and 13) are as yet unissued (see HS-820 036 to HS-820 050).

The complete manual supplements the Highway Safety Program Standards and presents additional information to assist State and local agencies to implement their highway safety programs. This volume is designed to assist the States to initiate, expand, and improve driver education programs.

Search terms: Highway safety; Safety programs; State government; Local government\*; Driver education; Commercial driving schools\*; Curricula\*; Instructors; High school driving courses\*

AVAILABILITY: Federal Highway Administration, Washington, D.C. 20591, Attn: Records Management Branch. \$2.15

HS-006 021 Fld. 3/4; 3/5

#### OREGON STUDY OF ADVISORY LETTERS: THE EFFECTIVENESS OF WARNING LETTERS IN DRIVER IMPROVEMENT

by Noel Kaestner; Edward J. Warmoth; Edward M. Syring

Oregon. Dept. of Motor Vehicles,

### 3/5 Driver Education (Cont.)

HS-006-021 (Cont.)

Salem

Nov. 1965 19p

The effects of the form and content of driver improvement warning letters on subsequent driving records were studied. An analysis of subsequent violation and accident records revealed: 1. drivers sent the standard form letter had involvement records similar to those who received no letter whatsoever; 2. personalizing the standard form letter without changing a word resulted in significantly fewer traffic involvements for the first six months; 3. the personalized softsell letter had significantly fewer accidents and/or violations at the end of a full year; and 4. the driving superiority of the two personalized letter groups was primarily attributable to the improvement of the drivers under age 25.

Search terms: Driver records; Traffic violations; Accident data; Driver improvement; Age factor in driving; Sex factor in driving; Young adult drivers; Problem drivers; Driver attitudes; Advisory letters\*

AVAILABILITY: Corporate author

HS-006 024 Fld. 3/4; 3/5

#### THE TEEN-AGED DRIVER: AN EVALUATION OF AGE, EXPERIENCE, DRIVING EXPOSURE AND DRIVER TRAINING AS THEY RELATE TO DRIVING RECORD

by Ronald S. Coppin; Gareth S. Ferdun; Raymond C. Peck

California. Dept. of Motor Vehicles, Sacramento

Feb 1965 41p 6 refs  
Report no. 21

Findings in a study of driving records of 10,250 teen-agers follow: 1. exposure was more important than age in determining accident and violation rates, except for older males who had fewer accidents than younger males; 2. more experienced drivers, both male and female, had more violations; 3. no significant differences were found between groups completing behind-the-wheel driving

training and groups who did not. Evidence to support a raise in the minimum licensing age in California was not found in terms of absolute risk. Relative risk approach pointed to the younger male's predisposition to accidents.

Search terms: Driving records; Age factor in driving; Age factor in accidents; Sex factor in driving; Sex factor in accidents; Traffic violations; Accident data; Driver miles\*; Behind-the-wheel instruction\*; Driver license laws; Adolescent drivers\*; Young adult drivers\*; California\*

AVAILABILITY: Corporate author

HS-006 025 Fld. 3/5

#### WHAT TO TEACH AND HOW TO TEACH IT

by William G. Anderson

Published in *Traffic Safety* v64 n12 p16-7, 38-9 (Dec 1964) 7 refs

The principal reason for the existence of a course called "Driver Education" is that it can make a significant contribution to the survival of future drivers. The worth of driver education depends ultimately on its potential for developing patterns of behavior that leads to accident avoidance rather than accident involvement. Behind-the-wheel instruction, course content, teaching methods, future aspects of driver education programs are discussed.

Search terms: Driver education; High school driving courses\*; Curricula\*; Accident prevention; Behind-the-wheel instruction\*; Defensive driving\*

HS-006 026 Fld. 3/5, 3/6

#### NEW YORK STATE HELPS DRIVERS KEEP LICENSES

by William S. Hults

Published in *Traffic Safety* v64 n1 p18-20, 37 (Jan 1964)

A description of New York State's driver improvement program includes a good, flexible, up-to-date point system to single out those who need help; a broad program adapted to driver needs, and based on education, technical training and emotional appeal can be very helpful. Discipline,

coupled with education, rather than penalization, should be the aim of driver improvement.

Search terms: New York\*; Driver improvement; Traffic safety programs; Point systems; Driver attitudes; Driver behavior; Violators; Driver licensing

HS-006 027 Fld. 3/5

#### THE DRIVER IMPROVEMENT PROGRAM

by Chris Imhoff

Published in *Traffic Safety* v66 n10 p22-4, 34-5 (Oct 1966)

Questions and answers concerning the National Safety Council's Driver Improvement Program cover its purpose, efficiency, driver skills involved, procedures and importance connected with standardizing the program, use of the program by the motor transportation industry, selection and training of instructors, community support, and the goals to be achieved.

Search terms: Driver education; Driver improvement schools\*; Instructors; Traffic safety programs; Community support; Driver skills; Standardization\*; National Safety Council\*

HS-006 028 Fld. 3/5

#### IS POOR ADMINISTRATION WEAKENING DRIVER EDUCATION?

by Raymond Meister

Published in *Traffic Safety* v64 n6 p20-1, 41-2 (Jun 1964)

Administrators of driver training programs are urged to develop and offer quality driver instruction programs staffed with qualified and interested teachers. The program should be given equal recognition with any instructional offering in order to be effective.

Search terms: Driver education; Instructors; Curricula\*; Traffic safety programs; High school driving courses\*; Administrative procedures; Classroom driver education\*; Behind-the-wheel instruction\*; Automobile simulators

### 3/5 Driver Education (Cont.)

HS-006 029 Fld. 3/5

#### WHAT ARE THE CHALLENGES TO DRIVER EDUCATION?

by Duane R. Johnson

Published in *Traffic Safety* v67 n1 p8-9, 33-4 (Jan 1967)

A traffic safety educator briefly reviews negative and positive aspects of driver education programs. The vital challenges are: 1. Carefully designed research to determine effective ways to teach accident avoidance; 2. High quality teacher preparation; 3. Quality driving instruction using simulators and radio communicative teaching devices; 4. Quality classroom instruction using teachers who understand personality development; 5. Expanded driver education course offerings; 6. State financial support to local school districts; 7. Dynamic leadership at state supervisory levels; 8. Adult driver education improvement and refresher courses; 9. Motorbike and motorcycle safety instruction.

Search terms: Driver education; High school driving courses\*; Accident rates; Traffic safety programs; Instructors; Motorcycle safety; Driver improvement; Multiple-car driving instruction\*

HS-006 030 Fld. 3/5

#### TEACH SKIDDING "KNOW-HOW" AT LIBERTY SCHOOL

Anonymous

Published in *Traffic Safety* v64 n11 p26-7, 39-40 (Nov 1964)

In 1963 skidding accidents caused 2000 fatalities and 100,000 injuries. Many experts believe this toll could be reduced by: (1) serious study of the physical causes of skidding; (2) a better understanding by the driving public of the prevention and correction of skids and (3) actual practice and instruction in the art of skid-control under safe conditions. The Liberty Mutual Insurance Co. established a "skid-school" at its Research Center in Hopkinton. Front-wheel skids; rear-wheel skids; power

categories covered in the course.

Search terms: Skidding; Wet skidding; Driver education; Curricula\*; Skid pans\*; Driver improvement; Accident prevention; Skidding accidents; Braking techniques; Behind-the-wheel instruction\*; Defensive driving\*

HS-006 031 Fld. 3/5

#### THE EFFECTS OF THE NATIONAL SAFETY COUNCIL DEFENSIVE DRIVING COURSE IN KNOWLEDGE AND ATTITUDE

by Frank Vilardo; Murray Blumenthal; Thomas Planck

National Safety Council, Chicago, Ill  
Apr 1968 26p 10 refs

The National Safety Council's driver improvement course was tested for effectiveness by a study using 155 subjects. It was concluded that the course altered knowledge and attitudes but that this effect disappears after six to twelve months. The improvement in attitude scores disappeared after six months but reappeared after twelve months. Accident involvement as a criterion was ruled out as unamenable to more immediate feedback.

Search terms: Driver improvement; Driver attitudes; Driver education; Psychological tests; Statistical analysis

AVAILABILITY: Corporate author

HS-006 060 Fld. 2/0; 3/5

#### THE EFFECT OF QUALITATIVELY DIFFERENT DRIVER EDUCATION PROGRAMS ON FREQUENCY OF ACCIDENTS AND VIOLATIONS

by Frederick L. McGuire

California Univ., Irvine. Dept. of Psychiatry and Human Behavior

Evidence which indicates that driver education programs tend to result in reduced accident rates are the result of faulty design. This study compares two driver training programs and concludes that the addition of simulator and behind the wheel training does not result in a different accident rate.

training methods to modify driver behavior.

Search terms: Driver education; Driver behavior; Automobile simulators; Accident rates; Behind-the-wheel instruction\*; High school driving courses\*; High school drivers; Driver education evaluation\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p245-58 (HS-006 046)

HS-006 061 Fld. 2/0; 3/5

#### LOGICAL FALLACIES IN RESEARCH ON DRIVER EDUCATION

by Gerald J. Driessen

National Safety Council, Chicago, Ill.  
10 refs

A distinction in driver education is made between formal training and informal training. Drivers taught by friends may learn as much or more about accident avoidance as drivers taught in a high school course. To use accident reduction as a criterion of the effectiveness of driver education courses, the amount and quality of accident avoidance training in formal and informal teaching should be measured and compared.

Search terms: Driver education; Accident prevention; Behind-the-wheel instruction\*; Driver education evaluation\*; Defensive driving\*; High school driving courses\*; Accident rates; Classroom driver instruction\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p260-73 (HS-006 046)

HS-006 071 Fld. 3/5

#### A SUPERINTENDENT'S VIEW OF DRIVER EDUCATION INSTRUCTION

by Robert P. Moser

Published in *Safety* v4 n1 p18-9 (Jan-Feb 1958)

Based on a speech presented before

### 3/5 Driver Education (Cont.)

HS-006-071 (Cont.)

regional workshop.

Driver education is presented as a significant means of human conservation and as an important phase of student attitudinal development for safe and sane behavior on the highway. Qualities and characteristics necessary for an effective driver educator are detailed.

Search terms: Driver education; Driver behavior; Instructors; Human behavior; Attitudes; Traffic safety programs

HS-006 072 Fld. 3/5; 3/4

#### DEFENSIVE DRIVING—"FAIL SAFE" FOR PRO DRIVERS

by Alfred C. Finch

Published in *Traffic Safety* v64 n5 p16-7, 36-7 (May 1964)

Defensive driving skills are described as a combination of common sense, good judgement, and adequate training for the prompt identification of a hazardous driving situation and the taking of evasive action. This system of operation has been accepted by fleet drivers as a standard of professional driving performance and is considered the foundation for measuring and comparing driving records.

Search terms: Defensive driving\*; Driver skills; Driver behavior\*; Accident prevention; Driver performance; Professional drivers; Driver improvement; Vision\*; Motor vehicle handling; Speed; Peripheral vision; Driver education

HS-006 119 Fld. 3/5

#### INSTRUCTORS MANUAL. DEFENSIVE DRIVING COURSE: NATIONAL SAFETY COUNCIL DRIVER IMPROVEMENT PROGRAM. 2ND ED.

National Safety Council, Chicago, Ill. 1965 120p

Cover title: DDC: DEFENSIVE DRIVING COURSE

This manual describes the approach and curricula to be used by an

approved instructor in the National Safety Council's Defensive Driving Course. Eight sessions cover the following aspects of defensive driving and accident avoidance: Preventable or Not; The Practice of Defensive Driving; How to Avoid a Collision with the Vehicle Behind; How to Avoid a Collision with an Oncoming Vehicle; How to Avoid an Intersection Collision; The Art of Passing and Being Passed; "The Mystery Crash" (single vehicle accidents); How to Avoid Other Common Types of Collisions.

Search terms: Driver Education; Curricula\*; Instructional materials\*; Traffic safety programs; High school driving courses\*; Defensive driving\*; Collisions (accidents); Accident prevention

AVAILABILITY: Corporate author

HS-006 120 Fld. 3/5

#### AN EVALUATION OF THE EFFECTIVENESS OF TELEVISED, LOCALLY ORIENTED DRIVER RE-EDUCATION

by John W. Hutchinson; Charles S. Cox; Bennie R. Maffet

Kentucky Univ., Lexington. Dept. of Civil Engineering

1968 30p 11 refs.

Prepared for presentation at the January 1969 Annual Meeting of the Highway Research Board, Washington, D.C. Sponsored by Office of Education and Chrysler Corp.

The effectiveness of a "candid camera" type of driver re-education program was measured by studying the changes in driver errors at 8 local intersections and analyzing changes in accident involvement rate for 48 local intersections. The televised program consisted of an 18 month series of 2-3 minute traffic safety films, showing local drivers in process of making an error with the correct driving procedure illustrated in sequence. Findings indicated both driver errors and total accidents were significantly reduced, 17.4% and 12.5%, respectively.

Search terms: Accident rates; Driver education; Driver improvement; Accident prevention; Television systems; Driver behavior;

Traffic safety programs; Driver education evaluation\*; Kentucky\*; Safety propaganda

AVAILABILITY: Corporate author

HS-006 121 Fld. 3/5

#### CHALLENGE FROM WITHIN

by Richard G. Boyer

Published in *Traffic Safety* v68 n1 p14-5, 36 (Jan 1968)

Suggests that driver education courses are failing to take advantage of innovations in education such as modular scheduling, individual study, and ungraded schools. Driver education teachers need to understand that young people want to learn, that learning cuts across disciplines, and that the subject content must be adequate.

Search terms: High school driving courses\*; Driver education; Instructors; Curricula\*

HS-006 129 Fld. 4/5; 3/5

#### THE COMPUTER: NEWEST TOOL IN DRIVER IMPROVEMENT

by Lawrence E. Schlesinger; Barbara Marx

Published in *Traffic Safety* v64 n2 p10-2, 34 (Feb 1964)

The main objective of a computer system approach is to improve coordination in driver improvement methods. Requirements that need to be met to establish the proposed driver improvement system include creation of a master file, high speed data processing system to handle detailed information and produce it in a variety of forms, a satisfactory violator classification scheme, and researchable driver improvement programs. Among applications of system are: prompt issuance of advisory letters; matching training method with type of violator; evaluating training method by driver record improvement.

Search terms: Computers; Digital computers; Computer programs; Information retrieval; Data processing; Problem drivers; Violators; Driver performance; Driver improvement; Traffic safety programs; Driver records; Information systems; Advisory letters\*; Driver education

### 3/5 Driver Education (Cont.)

HS-810 086 Fld. 3/5

#### HADDON ON HIGHWAY SAFETY

by William Haddon, Jr.

National Highway Safety Bureau, Washington, D.C.

Published in *Analogy* p4-7 (Winter 1968)

In this interview on driver education, Dr. Haddon discusses the importance of knowledge of possible malfunction of vehicles, of impairment by alcohol and medical conditions, of hazards of highway design deficiencies, and of vehicle design, especially seat belts. Drivers should be educated regarding handling emergency situations in the post crash phase. States vary in their compliance to the federal driver education standards.

Search terms: Driver education; Hazards; Driver-vehicle interface; Driver physical fitness; Seat belts; Post-crash phase; Pre-crash design; Crash phase; Standards; Compliance procedures; Federal-state relationships\*; Defective vehicles; Safety design; Emergency medical services

HS-006 187 Fld. 3/5

#### HOW TO LAY OUT A WINTER DRIVING SNOW COURSE

by Harold J. Holmes; Richard A. Whitworth

Published in *Traffic Safety* v68 n2 p18-21 (Feb 1968)

A winter driving course would be useful for high school driver training in the snow belt states. Special winter driving skills are described and exercises which should be done on the course are discussed.

Search terms: High school driving courses\*; Behind-the-wheel instruction\*; Automobile driving ranges\*; Driver education; icy road conditions; Wet road conditions; Snow; Winter\*; Driver skills

HS-006 188 Fld. 3/5

#### POLICE FLEET SAFETY: TRAINING AND DISCIPLINARY PRACTICES. PART 2

by Martin W. Johnson

Published in *Traffic Digest and Review* v13 n9 p7-1 (Sep 1965)

State and city police organizations were surveyed for their practices on pursuit driving and defensive driving. Their driver training programs are described.

Search terms: Police traffic services; Defensive driving\*; Driver training; Police chases\*; Police cars\*; Fleet driver training\*

HS-006 189 Fld. 3/5

#### THE CHANGING FACE OF THE DRIVING SCHOOL

by Alfred C. Finch

Published in *Traffic Safety* v67 n6 p12-3, 37 (Jun 1967)

A commercial driving school, the Arizona School of Driving, is described. The school, which is rated best in the country, shows what commercial driving schools can accomplish. It requires a minimum of 15 hours behind-the-wheel instruction, in contrast to the six hours high school driving courses give.

Search terms: Commercial driving schools\*; Behind-the-wheel instruction\*; High school driving courses\*  
Driver education

HS-006 190 Fld. 3/5

#### COMMUNITY DRIVER IMPROVEMENT SCHOOL MANUAL

Indiana Traffic Safety Council, Inc., Indianapolis

(1968) 44p

The primary objective of driver improvement schools, whether for violators or volunteers, is accident prevention through improvement of drivers' skills and attitudes. This manual explains how to set up such a school. Included are a suggested curriculum covering the traffic accident situation, traffic law enforcement, basic traffic regulations, defensive driving, driver attitude, vehicle maintenance and safety equipment, the Indiana point system, examinations, and a listing of safety films.

Search terms: Driver improvement schools\*; Indiana\*; Driver improve-

ment; Driver education; Violators; Accident prevention; Driver skills; Driver attitudes; Curricula\*; Traffic accidents; Traffic law enforcement\*; Traffic laws; Defensive driving\*; Automobile maintenance; Motor vehicle safety devices; Point systems; Driver tests; Motion pictures\*; Safety propaganda

AVAILABILITY: Corporate author

HS-006 191 Fld. 3/5

#### CENTRALIZED BUREAU KEEPS TAB ON NEW YORK TELEPHONE DRIVERS

Anonymous

Published in *Traffic Safety* v66 n4 p18-9 (Apr 1966)

How a centralized driver control bureau maintains daily performance information, codes training evaluation scores, accident information, and personal history facts of each of the New York Telephone Company's 2,400 drivers is explained. The data will be useful in accident analysis studies and as an aid in developing training courses. The authority of the driver control bureau also includes hiring drivers and administering training courses.

Search terms: Driver education; Driver performance; Professional drivers; Driver improvement; Data processing; Driver records; Accident analysis

HS-006 233 Fld. 3/5

#### TRUCK DRIVER TRAINING. A MANUAL FOR DRIVER-TRAINERS

by Neill Darmstadter

American Trucking Associations, Inc., Washington, D.C. Committee on Driver Supervision and Training  
1968 78p 17 refs

This manual for truck fleets covers the essential elements of a fleet training program. Included are: setting up a training program; public relations; safe driving rules; federal safety regulations; familiarity with the truck; inspection of equipment; basic operating techniques; operation of semitrailers and tractor trailers; training and testing of drivers; driver conduct at accident scenes; fire prevention and fire fighting; first aid; evaluation of training.

### 3/5 Driver Education (Cont.)

HS-006-233 (Cont.)

Search terms: Driver education evaluation\*; Truck drivers; Fleets (motor vehicles); Driver education; Fleet driver training\*; Public relations; Driver skills; Driver tests; Safety standards; Motor vehicle inspection; Accident location; Fire prevention; Fire fighting equipment; First aid; Driver behavior; Safety programs; Semitrailers; Tractor-semitrailers\*; Curricula\*; Federal regulations\*

AVAILABILITY: Corporate author \$3.50

HS-006 234 Fld. 3/5

#### DRIVER EDUCATION: BRIGHT LIGHT UNDER A BASKET

by Robert E. Lewis

Published in *California Journal of Traffic Safety Education* v16 n4 p7-8 (Jun 1969)

Reviews criticism of driver education programs; contrasts concept of driver education with driver training. Driver education should be a reinforcement of all positive social experiences, not merely the process of learning to manipulate an automobile or memorize laws and rules. Suggests all driver education courses, even "poor" ones, would indicate development of better drivers.

Search terms: Driver education; Driver attitudes; Driver behavior; High school driving courses; Driver education evaluation

HS-006 294 Fld. 3/5; 4/2

#### LET'S TEACH THEM TO LIVE

by Paul F. Hill

Published in *Traffic Safety* v62 n1 p10-2, 36-8 (Jan 1963)

Educating drivers and the public for traffic safety is discussed. The roles of driver education in schools, traffic courts, mass media such as television, community support are discussed. Effective and ineffective techniques of safety campaigns are outlined.

Search terms: Public opinion; Mass media; Television systems; Safety propaganda; Driver education; Traffic courts; Safety campaigns;

Community support; Driver attitudes

HS-006 295 Fld. 3/5

#### LET'S D.I.P. THE ACCIDENT RATE!

by William G. Johnson

Published in *The Highway User* p20-1 (Jun 1965)

The National Safety Council's Driver Improvement Program (D.I.P.) is described. Primarily a method of personal-contact teaching and learning with both authoritative instruction and two way discussion, the goal is to present the eight-hour course to 1,000,000 licensed drivers every year.

Search terms: Driver education; Community support; National Safety Council; Driver improvement; Defensive driving

HS-006 296 Fld. 3/5

#### ACCIDENT AND VIOLATION REDUCTION THROUGH BRIEF DRIVER IMPROVEMENT INTERVIEWS, 2.

by Noel Kaestner; Edward M. Syring

Published in *Traffic Safety Research Review* v11 n4 p99, 121-4 (Dec 1967) 5 refs

Rept. 1 is HS-001 145.

An Oregon study to devise a driver improvement interview program is evaluated. A special instruction course was formulated for interviewers. 660 male drivers in the 16-64 age bracket who had received only one driver improvement warning letter and had no drunken driving charges on their records were interviewed and their subsequent records compared with those of 660 control drivers of like background. Results showed 42% of the interviewees vs. 28% of controls drove a full year without a traffic entry; the time lapse before the first traffic involvement was longer for interviewed drivers; interviewees had fewer total traffic entries. Improvement is considered significant.

Search terms: Driver improvement; Oregon; Interviews; Males; Advisory letters; Driver records; Traffic violations; Driver performance studies

HS-006 297 Fld. 3/5; 2/0

#### THE HIGHWAY SAFETY ACT'S POTENTIAL IMPACT ON DRIVER EDUCATION

by Thomas A. Seals

Published in *California Journal of Traffic Safety Education* v16 n4 p9-11, 24 (June 1969)

The role of the National Highway Safety Bureau is outlined, especially the safety standards. Provisions of the driver education standard are discussed. The bureau's guidelines can serve as a catalyst in improving the quality of high school and commercial driving school courses.

Search terms: Driver education; National Highway Safety Bureau; Highway Safety Act of 1966; Safety programs; Safety standards; Commercial driving schools; Driver education evaluation; High school driving courses

HS-006 349 Fld. 3/5

#### THE INVENTORY GOES TO COLLEGE

by Charles H. Hartman

Published in *Traffic Safety* v63 n3 p14-5, 37 (Sep 1963)

How the annual traffic inventory was experimentally used as part of a college driver education and traffic safety course is discussed. The purpose was to help prepare prospective high school driver education teachers to assume a position of leadership, with regard to traffic safety both in the school and the community.

Search terms: Driver education; Instructors; Traffic safety programs

HS-006 350 Fld. 3/5

#### HELPING YOUR TEEN-AGER LEARN TO DRIVE. EXTENDED DRIVER EDUCATION LABORATORY ENRICHMENT PROJECT

by Arthur A. Opfer

Automotive Safety Foundation Washington, D.C.

1968 16p

Prepared in cooperation with Wisconsin Dept. of Public Instruction..

### 3/5 Driver Education (Cont.)

HS-006-350 (Cont.)

This pamphlet bridges the gap between the instructor in the driver education car, who introduces the basic skills, and the parents in the family cars, who want to provide their teen-agers with an adequate follow-through. The material should be used only in conjunction with a driver education program.

Search terms: Driver education; Behind-the-wheel instruction; High school driving courses; High school drivers; Driver skills

AVAILABILITY: Corporate author

HS-006 351 Fld. 3/5

#### THE OREGON DRIVER IMPROVEMENT INTERVIEW TRAINING AND EVALUATION STUDY

by Noel Kaestner; Edward M. Syring  
Oregon. Dept. of Motor Vehicles, Salem

Apr 1967 138p 34 refs  
Grant PHS-AC-00169

Summary Report is HS-000 704.

Lack of evidence regarding the effectiveness of the individual driver improvement interview prompted Oregon's Motor Vehicle Department to develop a flexible patterned interview: to aid driver improvement in problems with faulty self-perception, inaccurate or incomplete knowledge of traffic laws, or antisocial attitudes and tendencies which may adversely effect driving. Analysis of the driving records of the interview group and a control group of drivers revealed that the technique had been effective.

Search terms: Traffic laws; Driver improvement; Interviews; Oregon; Driver attitudes; Accident data; Traffic violations; Driver records; Problem drivers; Driver performance studies; Driver characteristics; Psychological factors

AVAILABILITY: Corporate author

HS-006 352 Fld. 3/5

#### AN EVALUATION OF SELECTED DRIVER AND TRAFFIC SAFETY EDUCATION COURSES

by Thomas A. Seals

Florida State Univ., Tallahassee

Aug 1966 18p 33 refs

Doctoral dissertation.

Purpose of the study was to compare a traditional course, a three-phase course, and two types of four-phase course in terms of student achievement in driving knowledge and road performance. Two junior high schools were chosen for study. The four-phase course is recommended, consisting of 30 hours classroom instruction, 10 hours of simulator instruction, 5 hours behind-the-wheel instruction and 5 hours observation, and some combination of on-street instruction and supervised study.

Search terms: Automobile simulators; High school driving courses; Behind-the-wheel instruction; Curricula; Classroom driver instruction; High school drivers; Driver performance studies

AVAILABILITY: Aetna Life and Casualty, Hartford, Conn. 06115

HS-006 353 Fld. 3/5

#### PRE-DRIVER AND DRIVER TRAINING IN SECONDARY SCHOOLS

by K. J. Sargent; Helen V. Colborne  
England. Road Research Lab., Crowthorne, Berks.

1969 39p 3 refs  
Report no. RRL-LR-263; PB-185 477

Questionnaires were sent to schools in Great Britain where some form of driver training was known to be in progress. At the time of this survey it was estimated that 200 courses were in existence for groups of pupils in secondary schools, meaning that only 0.3% of 15-17 age group would be affected. A later survey indicated that pre-driver or driver training courses are now held in 11% of secondary schools. This would only affect 1.2% of the school age group 15-17. The first survey showed that pre-driver training courses, involving six hours or less of car driving, are attended mainly by pupils 14-15 years of age. Other variations between the two basic types of course are discussed.

Search terms: Great Britain; Driver education; Questionnaires; High school driving courses; Classroom driver instruction; High school drivers; Behind-the-wheel instruction

AVAILABILITY: CFSTI as PB-185 477

HS-006 354 Fld. 3/6; 3/5

#### STUDY OF VIOLATION RECORDS OF PERSONS BEFORE AND AFTER ATTENDING DRIVER IMPROVEMENT CLASSES. PRELIMINARY REPORT

by Forst Lowery

Metropolitan Area Safety Council of Minnesota, Minneapolis

30 Jan 1968 4p

This study examined the traffic violation records of drivers who attended Twin Cities area driver improvement clinic classes. The number of convictions for traffic violations accumulated during the two-year period prior to attendance were compared with the number of traffic violations during the two-year period following the course. From the results it seemed clear that the driver improvement clinic is an effective force for reducing the traffic violations of persons attending the classes.

Search terms: Driver improvement schools; Traffic violations; Minnesota; Convictions; Driver records

AVAILABILITY: Corporate author

HS-006 397 Fld. 3/5

#### SCARE TACTICS IMPEDE TRAFFIC SAFETY: RESEARCHER

by James R. Adams

Published in *Traffic Digest and Review* v11 n1 p1206 (Jan 1963)

Scare tactics in driver education are more harmful than beneficial. The emotional impact and human reactions are explored. Reasons for failure of these campaigns: people have become habituated to them, or they refuse to consider the possibility that mutilation or death could happen to them.

Search terms: Driver education; Psychological factors; Safety campaigns; Public opinion; Emotional appeals; Driver attitudes

HS-006 398 Fld. 3/5

#### SAFETY PROGRAM TOPS OPERATING POLICIES FOR POLICE FLEETS

### 3/5 Driver Education (Cont.)

#### HS-006-398 (Cont.)

by Gerald O'Connell

Published in *Traffic Digest and Review* v11 n2 p8-12 (Feb 1963) 21 refs

A police vehicle accident prevention program, properly designed, should reduce the number of injuries to police personnel as well as operating costs for department vehicles. Procedures, motivation devices, training elements needed for a well-managed accident prevention effort are outlined.

Search terms: Safety programs; Accident prevention; Police; Fleet driver training

#### HS-006 399 Fid. 3/5

#### SIMULATOR PRESENTS, STUDENT RESPONDS AND INSTRUCTOR EVALUATES

by Richard Boyer

Published in *Traffic Digest and Review* v12 n2 p4, 6-7, 21-2 (Feb 1964)

Driver education is challenged as non-academic, is uncertain of its proper function, and is increasing in cost for practice driving. It is suggested that the use of simulators can provide an academic flavor. The basic ingredients of simulation are the trainer used by the student, a central control system for teacher of teacher-student evaluations, and film sequences portraying specific traffic situations. The advantages and limitations of these ingredients are outlined.

#### HS-006 460 Fid. 3/5

#### REVIEW OF THE EFFECTIVENESS OF THE DRIVER IMPROVEMENT COUNSELING PROGRAM APRIL 1966 TO JANUARY 1969.

Wisconsin. Dept. of Transportation, Madison. Div. of Highways

1969 3p

Results of Wisconsin's driver improvement counseling program, whose participants were computer selected, show its effectiveness. Participants were counseled either individually or in groups. Statistics showed that

group counseled drivers exhibited a more favorable driving record than those counseled on an individual basis. Not only were there a lesser number of persons involved in crashes and violations, but the number of crashes and violations per person was smaller for those in group participation.

Search terms: Wisconsin; Driver improvement; Driver performance studies; Driver records; Problem drivers; Traffic violations; Discussion groups; Accident rates; Convictions

AVAILABILITY: Corporate author

#### HS-006 461 Fid. 3/5

#### LET'S PUT SOME FUN IN OUR SAFETY PROGRAMS

by Marvin Rosenzweig

Published in *Traffic Safety* v62 n2 p26-7, 36 (Feb 1963)

A taxi company's safety program is described. Emphasis has been placed on positive aspects of safety. Games and contests have been found effective means of safety promotion. Since the beginning of the program the accident rate has been considerably reduced.

Search terms: Professional drivers; Safety programs; Fleets (motor vehicles); Taxicabs; Driver improvement; Accident prevention; Safety propaganda

#### HS-006 462 Fid. 3/5

#### LEARNING HOW TO SKID TO SURVIVE

by Robert M. Lienert

Published in *Automotive News* v45 p29 (6 Oct 1969)

In a one day course in the Netherlands students are trained on how to control unexpected skids and how to skid intentionally to change traffic lanes in tight situations and thus avoid crashes.

Search terms: Netherlands; Skidding; Driver education; Accident prevention; Driver skills; Lane changing; Behind-the-wheel instruction

#### HS-006 463 Fid. 3/5

#### CRISIS CONDITIONING—NEW APPROACH TO DRIVER TRAINING

Anonymous

Published in *Journal of American Insurance* v45 n4 p15-9 (Sep-Oct 1969)

Describes methods of putting drivers through life-like behind-the-wheel driving experiences. Most notable of the advanced driver education techniques are the skid schools, where trainees attend a class on the characteristics and countermeasures for skids, spinouts, and hydroplaning. Other projects being conducted in this realistic training include teaching drivers how to handle blowouts, unexpectedly running off a road, evasive maneuvers, off-road recoveries, and general vehicle control.

Search terms: Skidding; Driver education; Driver skills; Accident prevention; Panic stops; Motor vehicle control; Behind-the-wheel instruction; Skid pans; Wet road conditions; Defensive driving; Emergencies; Tire failures

#### HS-006 519 Fid. 3/5

#### DRIVER EDUCATION. WHAT IT IS—AND WHAT IT ISN'T

by William D. Cushman; Ray F. Wahl

Published in *Traffic Safety* v8 n8 p18-9, 34-5, 37 (Aug 1968)

Driver education in high schools is not a panacea for accidents, but it is a useful curricular offering that helps to prepare citizens to live in traffic, providing both theoretical and practical aspects. Innovations in the driver education teaching of various school systems are discussed.

Search terms: High school driving courses; Driver education; Classroom driver instruction; Behind-the-wheel instruction

#### HS-006 688 Fid. 3/4; 3/5

#### THE NATURE OF THE PROBLEM DRIVER

by William A. Mann

Published in *Caldea Calendar* v13 n3 p9-10 (Mar 1966)

Presented at Driver Improvement

### 3/5 Driver Education (Cont.)

HS-006-688 (Cont.)

School Conference, Michigan State University, Dec 15-18, 1965.

To set up guidelines for a driver improvement school, the characteristics of problem drivers should be examined. It is suggested that these drivers are involved in accidents because of their lack of knowledge, lack of attention, inadequate perception, personality traits. Recommendations for a driver improvement program are given, including materials to be taught, teaching methods, and teacher qualifications.

Search terms: Curricula; Problem drivers; Driver improvement schools; Instructors; Driver behavior; Accident causes; Driver skills; Psychological factors; Careless driving; Personality; Accident proneness

HS-006 690 Fid. 3/5; 3/12

#### TEACHING PERCEPTUAL SKILLS

by Leon Brody

Published in *Caldea Calendar* v15 n4 p17-8 (Jun 1968)

Perception involves more than vision; it involves awareness and comprehension of data transmitted from the physical and social environment. In connection with driver education, it is recommended that seeing must be developed as an aggressive act with a premium on speed of discernment; that a wide variety of experiences must be provided so that the student will understand many traffic situations; and that the student must be provided with an understanding of the psychological factors which affect perception of traffic situations.

Search terms: Visual perception; Driver education; Psychological factors; Perception; Driver skills; Traffic characteristics;

HS-006 691 Fid. 3/5; 5/3

#### MOTORCYCLE SAFETY THROUGH EDUCATION AND TRAINING

by Joe Hople

Published in *Caldea Calendar* v15 n4 p7, 22 (Jan 1968)

The great growth in the number of motorcycles has led to an increased safety problem. The greatest need is

for driver training in the skills needed to handle motorcycles. Accident records indicate that 70% of motorcycle accidents involved borrowed or rented motorcycles, and 20% of fatalities occurred to drivers taking their first ride. It is suggested that training in driver skills is more important than requiring use of a helmet, which may prevent injury but does not prevent accidents.

Search terms: Motorcycle safety; Motorcycle accidents; Fatalities; Helmets; Injury prevention; Driver education; Driver skills; Accident records; Loaned vehicles; Driving experience

HS-006 692 Fid. 3/5

#### DARE DRIVER EDUCATION CHANGE THE SOCIAL ORDER?

by Louis I. Bernoff

Published in *Caldea Calendar* v15 n3 p11-2 (Mar 1968)

It is suggested that high school driver education courses are out of date and need a new approach. It is recommended that the course be taught on the basis of controversial issues, with teams of students to take opposing sides. A list of issues for debate is given, including traffic law enforcement, driver licensing problems, driver education, insurance, sociological problems, and various aspects of highway safety.

Search terms: High school driving courses; Curricula; Driver education; Traffic law enforcement; Driver licensing; Insurance; Highway safety; Sociological aspects

HS-006 693 Fid. 3/5

#### PROJECTED IMPACT OF NATIONAL HIGHWAY SAFETY BUREAU'S FIVE STUDIES ON DRIVER EDUCATION

by LeRoy W. Dunn

Published in *Caldea Calendar* v16 n2 p7-8, 25-6 14 refs

Five studies on the effectiveness of driver education are briefly discussed. It is predicted that their impact on high school driver education courses will be in the areas of the driving task; the purposes and objectives of

driver education; effective methods of presentation; and driver education teacher preparation.

Search terms: Driver education evaluation; High school driving courses; Driver education; Instructors; Driving tasks; National Highway Safety Bureau

HS-006 694 Fid. 3/5

#### TOMORROW'S DRIVERS. TEACHER'S EDITION

by Joseph G. Pawlowski; John Minerick; A. R. Lauer

Lyons and Carnahan, Inc., Chicago, Ill.

1967 288p

Includes test forms A and B.

A manual for a high school driver education course. The teacher's edition portion provides test keys, a list of film sources, periodicals, and sources from which to procure additional material. Teaching suggestions include suggested discussion problems, class and individual projects, and specific film titles. The basic manual contains sections on: the history of the automobile and its place in modern life; legal and financial responsibilities of the driver; natural laws affecting driving; driver physical fitness; driver attitudes; basic automotive mechanics; controls and equipment of the car and how to use them; general driving practices; driving in traffic; expressway driving; difficult condition driving; defensive driving; the driver's role in highway safety; buying and maintaining a car; and a glossary of basic automotive terms.

Search terms: Driver education; Classroom driver instruction; Insurance; Curricula; High school driving courses; Legal responsibility; Financial responsibility; Driver physical fitness; Driver tests; Driver attitudes; Mechanics (physics); Driver skills; Controlled access highways; Defensive driving; Automobile maintenance; Motor vehicle dynamics; Motion pictures

AVAILABILITY: Corporate author

### 3/5 Driver Education (Cont.)

HS-006 741 Fld. 3/4; 3/5

#### THE FIVE PARTS OF THE DRIVING JOB

by Chris Imhoff

Published in *Traffic Safety* v64 n6 p22-3, 37-9 (Jun 1964)

The qualities a good motor vehicle fleet driver should have are described. They are: ability to avoid accidents and traffic violations; avoidance of undue wear and tear on the truck; avoidance of schedule delays and bad public relations. A fleet driver training program should teach safe driving, traffic rules, smooth operation, schedule observance, and courtesy. A catalog of driver errors and faults is included.

Search terms: Truck drivers; Fleet driver training; Traffic violations; Driver behavior; Driver skills; Accident prevention; Time factors; Public relations; Fleets (motor vehicles); Careless driving

HS-006 748 Fld. 3/5

#### THE PHILADELPHIA DDC STORY

by Harry H. Verdier

Published in *Traffic Safety* v69 n2 p18-9, 35-6 (Feb 1969)

The Safety Council of the Greater Philadelphia Chamber of Commerce has graduated more than 20,000 students from 25 defensive driving schools. The course and its publicity campaign are described. The organization has made progress in other highway safety efforts as well as the promotion of defensive driving.

Search terms: Defensive driving; Highway safety; Safety campaigns; Driver education; Advertising; Philadelphia

HS-006 749 Fld. 3/5

#### TEN WAYS TO IMPROVE BUS OPERATOR TRAINING

by M. H. Wooten

Published in *Traffic Safety* v65 n9 p16-7 (Sep 1965)

It is recommended that transit companies should streamline training programs, use visual aids, involve trainees in discussion, select

instructors carefully, develop line instructors, set standards of performance, conduct a counseling program, follow up new drivers, retrain drivers in refresher courses, and provide incentives.

Search terms: Fleet driver training; Driver education; Instructors; Fleets (motor vehicles); Instructional materials; Driver performance; Bus drivers

HS-006 750 Fld. 3/5

#### SIX WAYS TO HELP YOUR TEEN-AGER BECOME A BETTER DRIVER

by Arlene Scott

Published in *Parents' Magazine* v44 n2 p52-3 (Feb 1969)

The parents of students enrolled in high school driving courses can supplement the courses by setting a good driving example, teaching the teenager to recognize hidden hazards and dangers, keeping the family car in a safe driving condition, providing additional lessons at a professional driving school, accompanying the teenager for practice driving, and getting him ready to drive independently.

Search terms: High school driving courses; Behind-the-wheel instruction; Commercial driving schools; High school drivers; Defensive driving; Hazards; Automobile maintenance; Driving experience; Driver behavior

HS-006 771 Fld. 5/22; 3/5

#### BLOWOUTS WITHOUT DANGER

by Jack Krauss

Published in *Traffic Safety* v69 n8 p16-7, 34-6 (Aug 1969)

A new simulator enables students to experience a sudden flat tire under controlled conditions. It uses a standard wheel with air outlet tubes installed in the rim and a valve assembly to allow the air to escape. The device is simple enough for high school driving students to build and use. It should be used on a straight, level, paved road surface, preferably a driving range, and requires a source of compressed air. The tire is not destroyed, so it is economical to use.

Search terms: Tire failures; Tire

valves; Wheels; Automobile driving ranges; High school driving course; Road surfaces; Simulation; Inflation pressure

### 3/6 DRIVER LICENSING

HS-004 334 Fld. 3/6

#### THE ROLE OF THE EXECUTIVE BRANCH IN STATE GOVERNMENT

by C. C. Aycock

Published in *Journal of the Louisiana  
State Medical Society* v119 n9  
p333-34 (Sep 1967)

The lieutenant governor of Louisiana suggests that the medical profession must advise licensing authorities on the minimum mental and physical requirements for drivers, including the problem of young drivers and aging drivers.

Search terms: Community support;  
Driver physical fitness; Physicians;  
Age factor in driving; Driver license  
standards; Louisiana

HS-004 383 Fld. 3/6

#### PRELIMINARY EVALUATION OF EARLY PROGNOSTICATION IN EPILEPSY

by S. Olanders,  
O. Steinwall

Published in *Acta  
Neurologica Scandinavica*  
v41 Suppl 13 p509-16  
(1965)

An attempt to test the value of prognostication in epilepsy has been made with 148 cases and the outcome compared to the prognosis after two and three year periods. The investigation is connected with the problem of drivers' licenses for epileptics in the Scandinavian countries.

Search terms: Driver  
license standards, Driver  
physical fitness, Epilepsy,  
Handicapped drivers,  
Scandinavia

HS-004 386 Fld. 4/1,3/6,1/3

#### MAJOR CHANGES MADE IN UNIFORM VEHICLE CODE:

A REPORT  
by Robert H. Reeder

Published in *Traffic  
Digest and Review* v16  
n9 p5-8 (Sep 1968)

National Committee on  
Uniform Traffic Laws and  
Ordinances met in July 1968  
to make first major revision  
of Uniform Vehicle Code  
since 1962. Changes will  
deal with rules of the  
road and driver licensing.  
Significant changes are:  
fleeing from police as an  
offense, raising driver  
licensing age to 18, and  
rules on motorcycle  
operation.

Search terms: Motorcycle  
safety, Driver license  
laws, Age factor in driv-  
ing, Driving, Uniform  
Vehicle Code, Law  
uniformity, Legislation,  
National Committee on  
Uniform Traffic Laws  
and Ordinances, Police  
chases

HS-004 486 Fld. 3/6,3/9

#### FUNCTIONS OF MEDICAL ADVISERS IN LICENSING DRIVERS

by George A. Spendlove

Published in *Public Health  
Reports* v82 n12 p1071-6  
(Dec 1967)

Means should be devised to identify potentially dangerous drivers who are physically, mentally, or emotionally unfit. A medical advisory board can help identify the unfit and also prevent denial of driver license to handicapped persons who are safe drivers. Implied consent laws are the best way to control the drinking driver.

Search terms: Drinking  
drivers, Implied consent  
laws, Problem drivers,  
Emotions, Driver physical  
fitness, Mental illness,  
Driver license standards,  
alcoholism, Handicapped  
drivers, Driver license  
denial, Physicians.

HS-004 487 Fld. 3/9,3/6

#### EPILEPSY AND DRIVING Anonymous

Published in *British Medical  
Journal* v1 n5538 p510 (25 Feb  
1967)

Discusses British case in which a man who had no attacks of epilepsy since 1963 was still refused a driver's license because he takes the drugs which prevent attacks. The courts are likely to hold that taking treatment is proof of suffering from the disease and the applicant must prove the treatment is unnecessary.

Search terms: Driver  
license standards, Epilepsy,  
Driver physical fitness,  
Great Britain

HS-004 488 Fld. 3/9,3/6

#### THE MEDICALLY UNFIT DRIVER AND THE ESTABLISHMENT OF BASIC PHYSICAL STANDARDS FOR LICENSURE

by Robert D. Sparks

Published in *Journal of the  
Louisiana State Medical  
Society* v119 n9 (Sep 1967)

Presents eight recommenda-  
tions, mostly dealing with  
"high risk" drivers in  
Louisiana. Drivers addicted  
to alcohol or drugs or suf-

### 3/6 Driver Licensing (Cont.)

HS-004-488 (Cont.)

ferring from certain physical or mental conditions should be subjected to medical examination before licensing.

Search terms: Driver license standards, Driver physical fitness, Handicapped drivers, Accident risks, Medical examination, Motor vehicle inspection, Louisiana, Drug addiction, Alcoholism, Drinking drivers, Mental illness

HS-004 491 Fld. 3/12,3/6

THE QUEST FOR SAFETY  
by H. Daile

Published in Ophthalmic Optician p1-17 (2 Oct 1965)

Reports on visual efficiency and road safety. Discusses minimum standards required for visual acuity and other factors in various countries for drivers' license. Includes discussion of effects of age on visual ability.

Search terms: Highway safety, Vision, Visual acuity, Driver physical fitness, Driver license standards, Age factor in driving

HS-004 658 Fld. 5/2,3/6

HOW SAFE IS THE RIDE TO SCHOOL?  
by Ralph W. Crosby,  
Victor Block

Published in Traffic Safety v98 n10 p12-3,36 (Oct 1968)

Drivers could have avoided over 86% of school-bus crashes in Nebraska. Other state studies are discussed. West Virginia's requirements are considered a model: rigorous physical; written safety test; criminal, credit, military check; training program & refresher course.

Search terms: School buses, School Bus drivers,

Driver education, Accident analysis, State government, Bus design, Occupant behavior, Driver license standards, Motor vehicle safety design

analysis\* Statistical analysis, Driver performance, Accident rates, Violation Forecasting, Driver license examination

AVAILABILITY: From corporate author

HS-004 699 Fld. 3/6,3/9

RESTRICTIVE MEASURES RELATIVE TO EPILEPSY  
by Samuel Livingston

Published in Archives of Environmental Health v10 p508-16 (Mar 1965)

Surveys laws of various states regarding epileptics, including the issuance of driver's licenses. Suggests that many laws are unwarranted, discriminatory, and not based on medical knowledge. While 11 states prohibit an epileptic from having a driver's license, in 33 he may get one if he can meet certain medical requirements. Author suggests that they often make very careful drivers.

Search terms: Epilepsy\*, Legal factors, Driver license standards, Legal rights, Driver physical fitness

HS-004 823 Fld. 3/4,3/6

THE RELATION OF LICENSING TEST SCORES TO SUBSEQUENT DRIVER PERFORMANCE  
by Douglas J. McRae  
North Carolina Univ.,  
Chapel Hill. L. L. Thurstone  
Psychometric Lab.

Aug 1968 36p  
Grant PHS-MH-8258  
Report no. 67  
Sponsored by the Highway Safety Research Center,  
University of North Carolina

Relates two sets of variables: drivers' licensing test scores, and subsequent driving performance as measured by accidents and violations. Concludes the "driver skills" class of variables can in conjunction with other classes lead to better prediction of driver performance.

Search terms: Multivariate

HS-004 973 Fld. 4/1,3/6

THE ONE LICENSE CONCEPT  
National Committee on Uniform Traffic Laws and Ordinances  
Washington, D. C.

Published in Traffic Laws Commentary n6 p1-17 (28 Aug 1963)

Early data on state adoption of the "one license" concept (issued by state of residence with driver surrendering all other driver licenses).

Search terms: Driver license laws, State laws, Law uniformity, Uniform Vehicle Code\*

HS-005 026 Fld. 3/6,3/9

LICENSING "FIT" DRIVERS  
by James L. Karns

Published in Traffic Digest and Review v16 n12 p3-6 (Dec 1968) 7 refs

Significant elements in an increasing number of crashes include the physical condition and mental attitude of driver. For this reason the licensing administrator looks to the medical profession for assistance in combatting highway crashes. Standards for medical advisory boards, doctor-patient relationship, the physician's role are discussed.

Search terms: Physicians\* Drinking drivers, Driver licensing, Handicapped drivers, Mental illness, Diseases, Accident causes, Driver physical fitness, Driver attitudes

HS-005 028 Fld. 4/1,3/6

DISCRETIONARY SUSPENSION OF DRIVERS' LICENSES UPHOLD  
by Edward C. Fisher

### 3/6 Driver Licensing (Cont.)

HS-005-028 (Cont.)

Published in *Traffic Digest*  
and Review v16 n12 p18-20  
(Dec 1968) 12 refs

The authority of a driver licensing administrator to hold hearings and take action suspending a motorist's license is a powerful and effective method of removing unqualified drivers from the highways. The Supreme Court of the United States in effect upheld such discretionary suspensions when it refused to review a decision of the Illinois Supreme Court.

Search terms: Courts,  
Driver licensing,  
Administrative procedures,  
Driver license laws,  
Driver license suspension,  
Driver license revocation,  
State laws, Illinois\*,  
Supreme Court\*

HS-005 032 Fld. 5/2,4/1,3/6

TRANSPORTATION HANDBOOK,  
Wisconsin. Dept. of Public  
Instruction, Madison

Jan 1969 32p

This manual covers responsibilities of the school transportation team: the school board, the administrator, the driver and rider. Examples range from contract bids, school bus specifications to safety tips for school children and Walt Disney safety posters.

Search terms: School bus  
drivers, School traffic  
safety, School buses,  
Wisconsin\*, School  
bus passengers, Driver  
license standards

AVAILABILITY: From  
corporate author

HS-005 071 Fld. 3/6, 2/11

ANALYSIS OF UNIFORM TRAFFIC  
CITATIONS OF NO-RECORD  
DRIVERS

by Peggy Ann O'Neill

Washington. Dept. of Motor Vehicles,  
Olympia

Mar 1968 22p  
Report no. 008

Of all drivers receiving uniform traffic citations, a comparison was made between those with valid licenses and those with no valid license, called no-record drivers. The latter group differed little in age distribution but contained more women; these drivers got more citations for defective equipment and negligent driving, but fewer citations for speeding. Analysis was made of the fines charged to drivers without valid licenses in different counties. There was considerable variation.

Search terms: Driver licensing,  
Driver performance, Sex factor in  
driving, Traffic violations, Speed,  
Careless driving, Defective vehicles,  
Fines (penalties), Washington\*, Age  
factor in driving, Driver records

AVAILABILITY: Corporate author

HS-005 072 Fld. 3/6, 2/11

LICENSING EXAMINATIONS AND  
THEIR RELATION TO SUBSE-  
QUENT DRIVING RECORD

by Jean E. Wallace, Alfred Crancer,  
Jr.

Washington. Dept. of Motor Vehicles,  
Olympia

Jan 1969 23p  
Report no. 019

The written driver license examination was evaluated for its ability to predict future driving record. Scores on the exam were related to the driving records of a sample of 235 drivers over four years. Results question the validity of the written exam in its present form using present scoring procedures. The minimum standard of knowledge required for the exam may need redefinition. A licensing procedure should be capable of better screening of prospective drivers.

Search terms: Driver license exam-  
ination, Washington\*, Driver per-  
formance, Driver licensing, Driver  
records, Defensive driving\*, Traffic  
violations, Traffic laws

AVAILABILITY: Corporate author

HS-005 073 Fld. 3/6, 4/1

DRIVER LICENSING REVISIONS

National Committee on Uniform  
Traffic Laws and Ordinances, Wash-  
ington, D.C.

Published in *Traffic Laws Com-  
mentary* n68-2 (29 Nov 1968)

Contract FH-11-6869

Reports on revisions on driver licensing provisions of the Uniform Vehicle Code. Covers the basis for licensing, the one license concept, the increase in minimum age, license renewal, revocation and suspension, the use of medical advisory boards, interstate aspects of driver misconduct, licensing of commercial driving schools. Gives the text of these provisions and of the pertinent federal safety standard on licensing.

Search terms: Driver license stand-  
ards, Driver licensing, Age factor in  
driving, Driver license examination,  
Driver license renewal, Medical  
factors, Driver physical fitness,  
Driver license revocation, Driver  
license suspension, Driver educa-  
tion, Safety standards, Interstate  
compacts, Out-of-state drivers,  
Uniform Vehicle Code\*

HS-005 104 Fld. 2/5

HIGH-LEVEL LIGHTING FOR  
TEXAS INTERCHANGES

Anonymous

Published in *Rural and Urban Roads*  
v7 n4 p44-5, 52 (Apr 1969)

The advantages of flood-lighted free-way interchanges (100 foot towers; 10,000 watt lighting) may be summed up as follows: (1) panoramic illumination permits early driving decisions; (2) light placement is farther from the roadway, fewer lights are required making the road area safer.

Search terms: High level lighting\*,  
Highway lighting, Texas\*, Flood-  
lights\*, Interchanges, Driver perfor-  
mance, Towers\*, Lighting design

HS-005 105 Fld. 2/6

THE REPAIR OF SPALLED CON-  
CRETE SURFACES WITH THIN  
CONCRETE PATCHES: AN EXPER-  
IMENT ON TRUNK ROAD A.34 AT  
STAFFORD

### 3/6 Driver Licensing (Cont.)

HS-005-105 (Cont.)

by G. E. Higgins, C. H. Peters

England. Road Research Lab.,  
Crowthorne, Berks.

1968 20p

Report no. RRL-LR-217; PB-182 827

Extensive areas of concrete and cement-mortar patches were laid in 1959 on a heavily trafficked trunk road. The condition of the patches under heavy traffic is still excellent and indicates that thin concrete patches provide an effective method of repairing spalled concrete surfaces.

Search terms: Highway maintenance, Repair\*, Concrete pavements, Cements\*, Highway surfaces, Traffic volume, Great Britain\*

AVAILABILITY: CFSTI as PB-182 827

vehicle to be driven and the issuance of a license that identifies the class of vehicles driver is qualified to operate. Driver should not have to pass a road test only in a passenger car when driving task for each type of vehicle is so different.

Search terms: Driver licensing, Driver license examination, Road tests, Driving tasks, Truck drivers, Bus drivers, Motorcycles, Automobile drivers, Commercial drivers

HS-005 362 Fld. 3/6

#### THE PHYSICIAN AND TRAFFIC SAFETY

by Arthur H. Downing

Published in *Journal of Iowa Medical Society* v58 n8 p865-70 (Aug 1968)  
5 refs

Considers the physician's role and the traffic safety problem: especially the problem of driver licensing. The American Medical Association's list of conditions justifying medical review before a license should be issued is included. Knowledge on the mechanisms of injury is outlined.

Search terms: Traffic safety; Driver licensing; Handicapped drivers; Physicians\*; Driver license standards; Driver physical fitness; Injury research; Accident factors

HS-005 409 Fld. 3/6

#### A STUDY OF THE STATE OF IDAHO DRIVERS' LICENSE PROGRAM

Safety Management Inst., Washington, D.C.

13 Aug 1968 93p

This evaluation of a driver licensing system examines licensing tests and techniques; records and forms; medical problems; personnel training and requirements; financial aspects. Idaho's driver licensing system is compared to highway safety program standards. Recommendations are made to improve the driver licensing process, which is not handled consistently in all counties.

Search terms: Driver licensing; Highway Safety Act of 1966\*; Compliance procedures; Idaho\*; Driver license examination; Driver

records; Safety standards; Driver physical fitness; Driver license standards

AVAILABILITY: Corporate author

HS-005 555 Fld. 3/4; 3/6

#### WHAT "CLOSE CALLS" DO TO YOU AND YOUR DRIVING

by James G. Busse; W. Stevenson Bacon

Published in *Popular Science* v194 n3 p98-101 (Mar 1969)

Instrumented cars can be used to test driver stress and strain under heavy traffic conditions. Poor drivers can be eliminated, health risks spotted, and highway design improved. Ford's HSR (Highway Systems Research) instrumented car is described. This type of car is presently used for research, might eventually be used to test driver license applicants.

Search terms: Driver behavior; Driving tasks; Driver physical fitness; Measuring instruments; Driver performance; Accident prevention; Driver tests; Driving conditions; Stress conditions; Driver license examination; Highway design

HS-005 584 Fld. 3/6

#### THE USE OF PROJECTIVE TESTS IN THE SELECTION OF BUS DRIVERS

by H. H. Spangenberg

Published in *Traffic Safety Research Review* v12 n4 p118-21 (Dec 1968)

Describes two psychological tests useful in determining the accident proneness of bus drivers and analyzes the results of the testing of 75 bus drivers in Johannesburg, South Africa. Test results were correlated with the drivers' accident records and were found highly significant.

Search terms: Driver records; Bus drivers; Psychological tests; Accident proneness; Republic of South Africa\*; Accident records

HS-005 645 Fld. 3/6; 3/5

#### NEEDED: TRAINING FOR TRAFFIC PRO'S

by Arthur A. Tritsch

Published in *Traffic Safety* v69 n5

HS-810 066 Fld. 3/6

#### THE CLASSIFIED DRIVER LICENSE

by Richard M. Cook

National Highway Safety Bureau, Washington, D.C. Highway Safety Programs Service

Published in *Traffic Safety* v69 n2 p10-1, 40, 42 (Feb 1969)

Describes a method that requires the examination of drivers by type of

### 3/6 Driver Licensing (Cont.)

HS-005-645 (Cont.)

p22-3,39-40,42 (May 1969)

Discusses the need for training driver license examiners, driver improvement specialists, police, driver license clerks, motor vehicle inspection mechanics, and others connected with the traffic safety field. Points out the increasing needs for manpower in this field and outlines principles for training programs at all levels.

Search terms: Traffic safety; Manpower utilization\*; Education; Police; Driver license examiners; Driver improvement; Driver licensing; Motor vehicle inspection

HS-005 646 Fld. 3/6

#### THE ROLE OF THE PHYSICIAN IN DRIVER LICENSING

American Medical Assoc., Chicago, Ill. Committee on Medical Aspects of Automotive Safety

Published in *Journal of the American Medical Association* v206 n10 p2305-6 (2 Dec 1968)

The importance of the physician's role in reporting specific conditions and in counseling patients is examined. Physicians should advise patients not to drive if their ability is impaired but should not be required to report a large number of conditions to licensing authorities.

Search terms: Driver licensing; Driver physical fitness; Physicians\*; Medical conditions; Medical ethics\*; Driver license standards

HS-005 647 Fld. 3/6; 3/1

#### REVOCATION AND SUSPENSION OF DRIVERS' LICENSES

by Louis R. Morony

Published in *Traffic Digest and Review* v12 n6 p16-9, 34-6 (Jun 1964)

There is little unanimity among the states in the disciplinary actions taken against drinking drivers. This paper outlines the length of revocation periods, the issuing of restricted licenses, appeal procedures, the National Driver Register, driver license

compacts between states, the procedures for punishing those who drive on revoked licenses, and the difficulties in chemical tests used to determine blood alcohol levels.

Search terms: Legal factors; Blood alcohol levels\*; Blood analysis\*; Drinking drivers; Driver intoxication; Driver restrictions; Driver license revocation; State government; National Driver Register\*; Driver license standards; Penalties

HS-005 703 Fld. 3/6; 4/6

#### WHO'S FIT TO DRIVE

by George Town

Published in *Harvest Years* v9 n3 p19-21 (Mar 1969)

The present practices involving driver retesting and insurance for elderly drivers are outlined. Drivers over 65 are about 8.4% of the driving population but have only 5.5% of auto accidents. Older drivers have had problems keeping insurance, however.

Search terms: Driver physical fitness; Aged drivers\*; Driver license standards; Driver tests; Driver license examination; Insurance; Accident rates

HS-005 704 Fld. 3/6

#### AUTOMATION SPEEDS DRIVER LICENSING EXAMS.

Anonymous

Published in *Traffic Safety* v69 n7 p8-9, 37 (Jul 1969)

The METER (Machine Examining, Teaching, Evaluating, and Re-education) project in Washington state is described. It employs electronic and audio-visual gear to test more drivers more thoroughly. Driver license renewal applicants face a brief quiz if their records are good; if their records are poor they take simulated driving tests. The system provides each driver's record for five years.

Search terms: Driver license examination; Washington\*; Electronic devices; Audiovisual aids; Driver tests; Problem drivers; Driver license renewal; Driving simulation; Driver records

HS-005 705 Fld. 3/6

#### CONTROLLING DRIVER

### PHYSICAL EXAMS BY DATA PROCESSING

by C. D. Calkins

Published in *Commercial Car Journal* v116 n4 p90-1 (Dec 1968)

A trucking company with 2,000 drivers uses data processing equipment to keep records of the drivers' physical examinations. A flow chart of the system is given.

Search terms: Truck drivers; Driver physical fitness; Medical examination; Fleets (motor vehicles); Data processing

HS-005 758 Fld. 3/6; 3/5

#### DRIVER LICENSING AND DRIVER EDUCATION

by Douglas Toms

Published in *Traffic Digest and Review* v17 n4 p15-7

An automated driver license knowledge testing system used in Washington is described. It is used to administer the knowledge examination for a driver license. Slides are used to present the person taking the test with real driving situations on which he must make a decision. The system would also be useful for driver improvement programs.

Search terms: Driver license examination; Driver tests; Driver improvement; Washington\*; Driving simulation; Visual aids\*; Driver education

HS-005 761 Fld. 3/12; 3/6

#### MOTORIST VISION AND THE DRIVER'S LICENSE

by Oscar W. Richards

Published in *Traffic Quarterly* v20 n1 p3-20 (Jan 1966) 56 refs

Minimum vision examination for a driver's license should include tests for visual acuity and visual field, both of which are closely related to ability to read signs which is necessary for driving. Acuity of 20/40 and visual field of 130 degrees or better should be required. Retesting of accident repeaters should be required. Review of information on age changes in vision suggests that drivers' vision should be retested between the ages

### 3/6 Driver Licensing (Cont.)

HS-005-761 (Cont.)

of 50 and 55. Depth perception, color vision, and night vision are also discussed.

Search terms: Vision\*; Driver licensing; Driver license renewal; Visual acuity\*; Driver tests; Night vision; Accident causes; Driver license standards; Visual fields\*; Age factor in driving; Depth perception\*; Color perception\*; Signs (displays)

HS-005 799 Fld 3/6; 4/1

#### DRIVER LICENSING AND THE LAW. PART 1

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n7 p20-4 (Jul 1965) 51 refs

The control of drivers through licensing procedures, the authority of states to require drivers to have licenses, and the exercise of states' police power are discussed. The purpose of driver licensing has come to include the promotion of highway safety by insuring a minimum level of driver competence. The administration of state driver licensing agencies is outlined.

Search terms: Driver license laws; Driver licensing; State government; Police; Legal factors; Highway safety; Driver skills; Driver license standards; Administrative procedures

HS-005 800 Fld. 3/6; 4/1

#### DRIVER LICENSING AND THE LAW. PART 2

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n8 p20-4 (Aug 1965) 38 refs

The legal nature of a driver's license is discussed, especially the issue of license as a right versus license as a privilege. Various court decisions of this issue are outlined. The conditions under which license may be issued and the qualifications the applicant must meet are discussed.

Search terms: Driver license laws; Driver licensing; Legal factors; Driver license standards; Legal rights; Courts

HS-005 801 Fld. 3/6; 4/1

#### DRIVING LICENSING AND THE LAW. PART 3

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n9 p18-24 (Sep 1965) 49 refs

Age qualifications for the issuance of a driver's license and statutes requiring parents to assume financial responsibility for minors are discussed. The driver licenses examination and grounds under which license may be denied, including epilepsy, are outlined. Rules for the issuance of chauffeurs' licenses, duplicate licenses to replace lost or stolen ones, and limited licenses are discussed.

Search terms: Driver license laws; Driver licensing; Legal factors; Driver license standards; Driver license denial; Age factor in driving; Financial responsibility; Driver license examination; Epilepsy\*; Driver physical fitness; Driver restrictions; Professional drivers; Uniform vehicle code\*

HS-005 802 Fld. 3/6; 4/1

#### DRIVER LICENSING AND THE LAW. PART 4

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n10 p14-25 (Oct 1965) 110 refs

The driving privileges of out-of-state drivers are discussed. The conditions under which drivers' licenses may be suspended or revoked, conditions requiring mandatory revocation, conditions allowing discretionary suspension by administrative agencies are outlined. License may not be suspended or revoked arbitrarily; licensee must be accorded due process of law, some states requiring a notice and a hearing.

Search terms: Driver license laws; Driver licensing; Legal factors; Legal rights; Out-of-state drivers;

Driver license suspension; Driver license revocation; Administrative procedures

HS-005 803 Fld. 3/6; 4/1

#### DRIVER LICENSING AND THE LAW. PART 5

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n11 p15-22 (Nov 1965) 75 refs

Driver license suspensions for frequent conviction of serious offenses, habitual reckless or negligent driving, and gross negligence are discussed. The laws of various states on these points are compared. Revocation and suspension of license for out-of-state convictions and the Interstate Driver License Compact are discussed.

Search terms: Driver license laws; Driver licensing; Legal factors; State laws; Driver license suspension; Driver license revocation; Reckless driving; Careless driving; Negligence\*; Out-of-state drivers; State government; Convictions; Interstate compacts

HS-005 804 Fld. 3/6; 4/1

#### DRIVER LICENSING AND THE LAW. PART 6

by Robert L. Donigan; Edward C. Fisher

Published in *Traffic Digest and Review* v13 n12 p16-24 (Dec 1965) 95 refs

The issuance of "hardship" or "occupational" permits to persons whose licenses have been revoked is discussed. Restoration of license after revocation or suspension, the operation of point systems, administrative action under the implied consent laws, driver license renewal and re-examination, and court review of administrative actions are outlined.

Search terms: Driver license laws; Driver licensing; Legal factors; Driver license revocation; Driver license suspension; Driver restrictions; Driver license renewal; Driver license examination; Courts; Administrative procedures; Point systems; Implied consent laws\*;

### 3/6 Driver Licensing (Cont.)

HS-005-804 (Cont.)

Drinking drivers; Blood alcohol levels\*; Driver intoxication; Legal rights

HS-005 872 Fld. 3/6; 4/1

#### DRIVER LICENSING AND THE COURT

by James P. Economos

Published in *Traffic Digest and Review* v17 n7 p3-6, 24 (Jul 1969)

Courts and driver licensing authorities should cooperate to create an environment in which drivers obey traffic laws voluntarily. The Uniform Vehicle Code requires courts to report convictions for traffic violations to the driver licensing agency. Problems in administering this requirement are outlined. The responsibility of traffic courts for driver improvement is discussed. Appeal procedure from driver license actions is included.

Search terms: Traffic courts; Driver licensing; Driver improvement; Driver license suspension; Driver license revocation; Convictions; Traffic laws; Traffic violations; Legal factors; Uniform Vehicle Code\*; Driver records; Interstate compacts

HS-005 873 Fld. 3/6; 1/3; 5/9; 3/5

#### THE NEED FOR TRAFFIC SAFETY LEGISLATION

by James E. Bassett

Published in *Police* v9 n5 p38-41 (May-June 1965)

Presented to National Association for Automotive Medicine Conference, Oct. 1964.

The accident problem in Kentucky is outlined. The Driver Limitation Program is explained; medical advice will be sought concerning the licensing of special risk drivers, including the physically handicapped and those with chronic conditions and mental problems. A program for re-examining all drivers every four years needs to be developed, annual

motor vehicle inspection made mandatory, driver education in high schools made available to all students, and the quality of traffic courts improved.

Search terms: Kentucky\*; Traffic safety programs; Driver physical fitness; Motor vehicle inspection; Driver education; Driver licensing; Accident prevention; Traffic courts; Handicapped drivers; Mental illness; Driver license examination; Medical advisory boards\*; High school driving courses\*; Traffic law enforcement; Accident rates

HS-005 961 Fld. 3/1; 3/6

#### MARYLAND FIRST STATE WITH 'EXPRESS CONSENT'

by Spencer McAllister

Published in *Analogy* p16-9 (Autumn 1969)

Approved legislation requires Maryland drivers to sign an affidavit consenting to a chemical test for alcohol before receiving a license. Differences between express consent and implied consent are pointed out.

Search terms: Maryland\*; Drinking drivers; Community support; Express consent laws\*; Implied consent laws\*; Driver license laws; Chemical analysis

HS-820 041 Fld. 3/6

#### HIGHWAY SAFETY PROGRAM MANUAL. VOLUME 5. DRIVER LICENSING

National Highway Safety Bureau, Washington, D.C.

Jan 1969 57p 11 refs

One of 17 volumes, two of which (vols. 12 and 13) are as yet unissued (see HS-820 036 to HS-820 050).

The complete manual supplements the Highway Safety Program Standards and presents additional information to assist State and local agencies to implement their highway safety programs. This volume provides guidelines for development, operation, and evaluation of a driver licensing program.

Search terms: Highway safety;

Safety programs; State government; Local government\*; Driver licensing; Driver improvement; Driver records

AVAILABILITY: Federal Highway Administration, Washington, D.C. 20591, Attn: Records Management Branch. \$2.70

HS-006 026 Fld. 3/5, 3/6

#### NEW YORK STATE HELPS DRIVERS KEEP LICENSES

by William S. Hults

Published in *Traffic Safety* v64 n1 p18-20, 37 (Jan 1964)

A description of New York State's driver improvement program includes a good, flexible, up-to-date point system to single out those who need help; a broad program adapted to driver needs, and based on education, technical training and emotional appeal can be very helpful. Discipline, coupled with education, rather than penalization, should be the aim of driver improvement.

Search terms: New York\*; Driver improvement; Traffic safety programs; Point systems; Driver attitudes; Driver behavior; Violators; Driver licensing

HS-006 032 Fld. 3/6

#### DRIVER LICENSING, IMPROVEMENT AND CONTROL DATA

National Safety Council, Chicago, Ill. 1966 43p

Excerpted from reports of the Annual Traffic Inventory for 1965.

Displays in tabular form procedures and practices of each state regarding driver examination, licensing, and improvement. Questionnaires used to acquire this information are included.

Search terms: Driver licensing; Driver license examination; Driver improvement; Driver license examiners; Driver license renewal; Instructors; Driver records; Administrative procedures; Questionnaires\*

AVAILABILITY: Corporate author

### 3/6 Driver Licensing (Cont.)

HS-006 046 Fld. 2/0; 3/9; 3/6

#### PRE-CRASH FACTORS IN TRAFFIC SAFETY: 12th ANNUAL SYMPOSIUM

by George G. Snively, ed.

American Assoc. for Automotive Medicine, Salem, N.J.

17-18 Oct 1968 311p

Highway safety should be of concern to medical schools. Seventeen papers explore many aspects of the highway safety problem from the standpoint of public health and preventive medicine.

Search terms: Highway safety; Medical sciences; Pre-crash phase; Driver behavior; Driver education; Conferences\*; Human factors engineering; Safety standards; Driver licensing; Crashworthiness\*; Emergency medical services; Traffic safety; Public health\*; Accident factors

AVAILABILITY: Corporate author (Includes HS-006 047 to HS-006 063)

HS-006 058 Fld. 2/0; 3/6; 3/9

#### PREVENTIVE MEDICINE: CALIFORNIA'S DRIVER IMPROVEMENT PROGRAM

by Keith Ball

California. Dept. of Motor Vehicles Sacramento

6 refs

Driver licensing practices of California are discussed in relation to drivers with physical or mental disabilities. The importance of the medical profession in evaluating such drivers is emphasized. A number of case histories are given to illustrate the types of driver impairment which are grounds for drive license denial or suspension—epilepsy, losses of consciousness, diabetes, heart disease, narcolepsy, and similar conditions.

Search terms: Case reports\*; Driver licensing; Handicapped drivers; Driver physical fitness; Mental illness; California\*; Epilepsy\*; Diabetes mellitus\*;

Driver license denial; Driver license suspension; Physicians\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p203-22 (HS-006 046)

HS-006 122 Fld. 3/6; 4/1

#### DRIVER RE-EXAMINATION LAWS

Anonymous

National Committee on Uniform Traffic Laws and Ordinances, Washington, D.C.

Published in *Traffic Laws Commentary* n69-1 pl-26 (20 Jun 1969) 133 refs

Contract FH-11-6869

While all states require examination before issuance of a driver's license, the adoption of periodic re-examination would be a development of great magnitude in highway safety, involving the entire driving population of more than 100,000,000 people. State laws that form the basis for such a program are reviewed, together with pertinent provisions of the Uniform Vehicle Code. Circumstances under which drivers are now required to be re-examined are outlined.

Search terms: Driver license examination; Driver license standards; State laws; Uniform Vehicle Code\*; Driver physical fitness; Driver license revocation; Driver license renewal; Driver license suspension

HS-006 192 Fld. 3/6; 3/9

#### MEDICAL ASPECTS OF DRIVER LICENSING. MEDICAL DEFICIENCIES—DETECTION, EVALUATION AND REPORTING

by Harold M. Erickson; Julian A. Waller

Published in *Traffic Safety* v65 n1 p22-5, 32-3 (Jan 1965)

The need for a selective procedure in screening prospective drivers with medical conditions is discussed. Aid of physicians in determining criteria for evaluating driver physical fitness is recommended. Collection of specific data to relate medical defi-

establish criteria. Programs of California and Oregon relating to licensing of impaired drivers are detailed.

Search terms: Driver licensing; Handicapped drivers; Driver physical fitness; Oregon\*; California\*; Accident risks; Medical conditions; Physicians\*; Mental illness; Accident factors; Heart diseases\*; Medical advisory boards\*; Data acquisition; Epilepsy\*; Vision\*; Diabetes mellitus\*

HS-800 165 Fld. 3/6

#### DRIVER LICENSING PROGRAM PROJECT. FINAL REPORT

by Robert L. Chapman; Ruth Boyatt; John O'Connell; William R. Fecney

Institute for Educational Development, Newport Beach, Calif.

30 Jun 1969 137 refs  
Contract FH-11-6594

A plan for evaluating the effectiveness of current or proposed driver licensing programs has been developed. A study group considered the driver licensing problem from the viewpoints of law, systems analysis, psychology, sociology, education, and driver licensing administration. Previous research was reviewed, an evaluation plan selected and entitled PFC (planning, feedback, change), and means for applying this plan to driver licensing outlined.

Search terms: Driver licensing; Administrative procedures; Benefit cost analysis\*; Driver license standards; Driver physical fitness; Driver education; Driver skills; Driver behavior; Safety programs; Systems analysis; Psychological factors; Law enforcement\*; Sociological aspects

HS-006 298 Fld. 3/6

#### NEW DRIVER-TESTING DEVICE PRESENTED

Anonymous

Published in *The Renault Guide* v3 p24-6 (3rd Quarter 1969)

A traffic accident simulator to check a driver's reflexes has been designed for the purpose of testing license applicants. The device uses an auto driving range with three traffic lights

### 3/6 Driver Licensing (Cont.)

HS-006-298 (Cont.)

traffic situations, and actuated by a mechanism that changes signals in a random sequence to check a driver's reaction to a panic situation. This new method of testing could aid a physician in evaluating gradual deterioration of a driver's physical condition, give a driver a graphic demonstration of his own and the vehicle's limitations without danger, and could be helpful in the safety design of cars.

Search terms: Driver behavior; Driver performance; Driver evaluation devices; Driver physical fitness; Reaction time; Automobile driving ranges; Driver license examination; Traffic signals; Accident risks; Safety design; Automobile design

HS-006 299 Fld. 3/6

#### TESTING DRIVERS: A MANUAL FOR DRIVER-LICENSE EXAMINERS AND ADMINISTRATORS

by Frank D. Altobelli; Ray L. Baseman; Glenn L. Crawford; Peter Dygala; Newman W. Jackson; H.W. Kirk; Clifton E. Lubert; Tony Scaramucci; Ray F. Ward

American Assoc. of Motor Vehicle Administrators, Washington, D.C.

1967 156p

Supported in part by Insurance Inst. for Highway Safety, Washington, D.C.

A basic guide for driver-license administrators and examiners in the United States and Canada, incorporating recommendations of procedures likely to be readily adaptable to use within a jurisdiction. Chapters are included on administration, personnel, examining facilities, vision, knowledge tests, road tests, physical and mental factors other than vision of driver-candidates, records and their use, standards for driver licensing. This volume is not intended to replace manuals based on or dealing with the specific laws or procedures of a given jurisdiction.

Search terms: Driver evaluation devices; Driver licensing; Driver license standards; Driver license examiners; Driver license examina-

tion; Administrative procedures; Test facilities; Vision; Vision tests; Road tests; Driver physical fitness; Driver records; Canada; United States; Driver tests; Handicapped drivers

AVAILABILITY: Corporate author

HS-006 300 Fld. 3/6; 3/4

#### EVALUATION OF BRIEF FAMILY THERAPY FOR PROBLEM DRIVERS

by Donald H. Schuster

Iowa State Univ. of Science and Technology, Ames. Dept. of Psychology

Jul 1967 6p 7 refs

A comparison was made between the subsequent driving records of a group of 6 problem drivers who were given brief family group interview therapy, and a control group of 12 problem drivers who were given the standard one-hour interview with a highway patrolman. The past driving records of the two groups were comparable. The study took place in Iowa. One year later, no significant differences between the two groups appeared. A follow-up will be done three years later, but this technique does not seem promising.

Search terms: Driver improvement; Driver behavior; Problem drivers; Interviews; Iowa; Driver records

AVAILABILITY: Corporate author

HS-006 354 Fld. 3/6; 3/5

#### STUDY OF VIOLATION RECORDS OF PERSONS BEFORE AND AFTER ATTENDING DRIVER IMPROVEMENT CLASSES. PRELIMINARY REPORT

by Forst Lowery

Metropolitan Area Safety Council of Minnesota, Minneapolis

30 Jan 1968 4p

This study examined the traffic violation records of drivers who attended Twin Cities area driver improvement clinic classes. The number of convictions for traffic violations accumulated during the two-year period prior to attendance were compared with the number of traffic violations during the two-year period following

the course. From the results it seemed clear that the driver improvement clinic is an effective force for reducing the traffic violations of persons attending the classes.

Search terms: Driver improvement schools; Traffic violations; Minnesota; Convictions; Driver records

AVAILABILITY: Corporate author

HS-006 355 Fld. 3/6

#### BLEEDING HEARTS VS. TRAFFIC SAFETY REALISM OR RATIONALIZATION?

by Edward Scheidt

Published in *Journal of Insurance Information* v26 n4 p9-13 (Jul-Aug 1965)

The increasing accident rate is discussed in light of predictions that there will be 50% more vehicles by 1975 and that 100 mph may be the legal speed limit. It is suggested that holding a driver's license is not a vested right and that more severe standards are needed to determine original competence before issuing a license, as well as swift restrictive action against chronic violators and accident repeaters. The accident problem will become more severe if problem drivers are allowed to remain on the roads.

Search terms: Accident rates; Speed limits; Legal rights; Driver license standards; Driver license suspension; Driver license revocation; Problem drivers; Violators; Accident factors; Driver licensing

HS-006 356 Fld. 3/6; 4/1

#### RECOMMENDATIONS AND SUGGESTED CHANGES IN THE ILLINOIS DRIVERS LICENSE LAW. FINAL REPORT

Illinois. Citizens Advisory Committee on Drivers Licensing, Springfield (1968) 23p

An Illinois Citizens Advisory Committee on Drivers Licensing recommended deletions and additions for the Drivers License Act, Chapter 6 and 6A of the Illinois Laws Relating to Motor Vehicles, 1967. These changes assure conformity with the Uniform Vehicle Code and the national highway safety standards. Recommendations are summarized.

### 3/6 Driver Licensing (Cont.)

#### HS-006 356 (Cont.)

Search terms: Driver license laws; Driver licensing; Uniform Vehicle Code; Community support; Illinois; Safety standards; Driver education; Driver license revocation; Driver license examination; Medical advisory boards; Driver physical fitness; Implied consent laws

AVAILABILITY: Corporate author

#### HS-006 401 Fld. 3/6

### ILLINOIS MAKES DRIVER LICENSES HARDER FOR THE UNQUALIFIED DRIVERS TO GET AND FOR THE UNSAFE ONES TO KEEP

by Rus Arnold

Published in *Traffic Digest and Review* v11 n2 p20-4 (Feb 1963)

Reviews some aspects of 1963 driver licensing practices in Illinois: point system, revocations, requirements for vision tests, suspensions, the need for mandatory reports from physicians concerning the existence of disabilities which may affect driving ability. Unusual cases are presented to show the need for tougher laws.

Search terms: Illinois; Driver licensing; Driver license laws; Medical conditions; Physicians; Driver tests; Vision tests; Point systems; Driver physical fitness; Driver records:

#### HS-006 402 Fld. 3/6

### DRIVER RECORDS CODING MANUAL

Texas. Dept. of Public Safety, Austin 92p

This manual is intended to instruct the user in the basics of coding Texas Department of Public Safety driver records that can be used in building an electronic record for computer processing. All driver record files with or without license numbers, all conviction records, accidents, and recorded actions since May 1, 1965 are to be coded. Some convictions and suspensions for earlier years are also coded.

Search terms: Driver records; Coding; Accident records; Texas; Violators; Data acquisition; Convictions; Traffic violations; Driver license suspension; Driver licensing; Motor vehicle registration; Problem drivers;

AVAILABILITY: Corporate author

#### HS-006 464 Fld. 3/6

### WHERE DO WE STAND IN DRIVER CONTROL?

by Anthony Antony

Automotive Safety Foundation, Washington, D.C.

15 Sept 1966 10p

Presented at a meeting of the Road Gang, Washington, D.C.

State laws on driver licensing, license suspension, and license revocation are described. Uniformity in driver licensing and driver control is urged. The probable effects of the Highway Safety Act of 1966 on driver licensing and control are discussed.

Search terms: Driver licensing; Driver license laws; Law uniformity; Driver license examination; Driver records; Driver license revocation; Driver license suspension; Highway Safety Act of 1966

AVAILABILITY: Corporate author

#### HS-006 465 Fld. 3/6

### AN EVALUATION OF A NEW APPROACH TO DRIVER LICENSING

by Douglas Toms; Steve Paulsrude

Published in *Traffic Digest and Review* v17 n9 p4-5 (Sep 1969)

Method, acceptance, and results of a new automated driver knowledge testing and education system in Washington State for driver licensing are described. The method tests applicants in simulated driving situations by use of audio visual aids. Questionnaires indicated in general favorable reactions to the new exam. Although 47% of those tested failed the exam, 85% of those who passed and 60% of those who failed liked it. The new visual slide formal allows for con-

struction of the examination to meet National Highway Safety Bureau standards as they apply to driver licensing.

Search terms: Washington; Driver license examination; Driver licensing; Driver license renewal; Visual aids; Driver tests; Questionnaires; Public opinion; Driving simulation; Safety standards; National Highway Safety Bureau

#### HS-006 520 Fld. 3/12; 3/9; 3/6

### RELATIONSHIP OF OCULAR PATHOLOGY AND DRIVING IMPAIRMENT

by Arthur H. Keeney

Published in *Transactions of the Pennsylvania Academy of Ophthalmology and Otolaryngology* v21 p22-7 (Spr 1968)

Presented at annual meeting of Pennsylvania Academy of Ophthalmology and Otolaryngology, May 1967.

Of 1,153 Pennsylvania drivers required to take driving tests or medical exams, 33% proved to have need for corrective measures, some involving their vision. Ground rules for a medical review board are: whether the illness is short-term; individualized examinations; giving the handicapped the benefit of the doubt. Twelve basic problem areas involving visual defects and problems are listed.

Search terms: Medical advisory boards; Pennsylvania; Vision tests; Vision disorders; Handicapped drivers; Driver physical fitness; Medical examination; Driver tests

#### HS-006 751 Fld. 3/6; 4/7

### FACTOR ANALYSIS OF DRIVER RECORD

by David M. Harrington

Published in *Traffic Safety & Research Review* v12 n3 p81-7 (Sep 1968) 10 refs

Driver record data including accidents, violations, license restrictions, and age were collected for 43,000 male and 30,000 female drivers. Factor analyses revealed three driver record factors: moving violation, descriptive of actual driving behavior

### 3/6 Driver Licensing (Cont.)

HS-006-751 (Cont.)

and types of errors made; non-moving violation, reflecting condition of vehicle and technical violations of the law, rather than driving behavior; and paired accident-conviction, reflecting legal responsibility for an accident. Results confirm most researchers' idea of the structure of accident and violation data, showing that accidents are most closely related to the moving violation factor.

Search terms: Driver records; Driver behavior; Traffic violations; Defective vehicles; Accident factors; Legal responsibility; Accident causes; Statistical analysis; Sex factor in driving; Males; Females; Driver restrictions; Age factor in driving; Convictions; Accident responsibility

### 3/7 DRUGS OTHER THAN ALCOHOL

HS-004 328

TOXICOLOGICAL STATISTICS FOR BARBITURATES, OTHER SEDATIVES, AND TRANQUILLIZERS IN ONTARIO: A 10-YEAR SURVEY  
by R. C. Gupta, J. Kofoed

Published in Canadian Medical Association Journal v94 p863-5 (16 Apr 1966)

There is a steady increase in cases of drug poisoning. Postmortem blood specimens from hospitals and urine specimens from patients in hospital are analyzed with the following methods: qualitative and quantitative tests for barbiturates, sedatives, and tranquilizers; and that barbiturates even without alcohol can adversely affect their driving ability. Other drugs can also be dangerous to drivers.

Search terms: Accident causes, Alcoholic beverages, Barbiturates, Blood analysis, Driver intoxication, Drugs, Physiological effects, Poisoning, Sedatives, Tranquillizers, Urine

HS-004 510 Fld. 1/3,3/1,3/7

THE COMBINED EFFECT OF ETHANOL AND OTHER DRUGS  
by Robert B. Forney

1967 34 refs

Current equipment is not sufficiently sophisticated to develop the most pertinent information on the combined effect of alcohol and other drugs. Some of the current techniques discussed are: the Gymkana experiment; Delayed Auditory Feedback (DAF); and the Pursuit Meter (PM). A national effort in collecting and analyzing blood from traffic accident victims is recommended.

Search terms: State of the art studies, Alcohols, Drugs, Barbiturates\*,

Tranquilizers\*, Narcotics\*, Blood analysis, Physiological effects, Synergism\*

AVAILABILITY: In Mich. Univ. Prevention of Highway Injury, p70-7 (HS-004 500)

HS-004 590 Fld. 3/7,3/4

STREET FITNESS AFTER ANAESTHESIA IN OUT-PATIENTS  
by A. Doenicke

Published in Acta Anaesthesiologica Scandinavica suppl 17 p95-7 (1965)

Any post-anesthetic patient must be looked upon as a definite traffic hazard. Results are reported from six kinds of tests given to twelve volunteers who had received various anesthetics. Subjects were not sufficiently alert and awake to avoid traffic accidents.

Search terms: Driver physical fitness, Traffic accidents, Anesthetics\*, Drugs, Accident risks

HS-004 764 Fld. 3/7

DRIVING RECORDS OF PERSONS ARRESTED FOR ILLEGAL DRUG USE.  
by Alfred Crancer, Jr.

Published in Police Chief v36 n2 p41-3 (Feb 1969) 4 refs

Driving records for users of narcotics, dangerous drugs and marijuana were compared with comparable population groups. Although accident and violation rates were higher, none of the illegal drug users had been involved in a fatal accident.

Search terms: Drug addiction, Drugs, Driver records, Driver performance studies, Traffic violations, Fatalities, Accident rates, Narcotics\*, Marijuana\*

HS-004 765 Fld. 3/7

DRUGS AND DRIVING  
by Richard H. Walker

Published in Memphis and Mid-South Medical Journal v37 p101-5 (Mar 1962)

Groups of drugs considered major offenders in making drivers unfit are: central nervous system depressants; hypnotics, sedatives, and anesthetics; tranquilizers; central nervous system stimulants; antihistamines; motion sickness drugs; and antibiotics. The blood alcohol concentration which will impair driving ability is also discussed.

Search terms: Drugs, Driver physical fitness, Drinking drivers, Intoxication, Antibiotics\*, Narcotics\*, Anesthetics\*, Sedatives\*, Tranquilizers\*, Antiemetics\*, Blood alcohol levels\*, Hypnotics\*, Antihistaminics\*

HS-004 880 Fld. 3/7

OBJECTIVE MEASUREMENTS OF THE EFFECTS OF DRUGS ON DRIVER BEHAVIOR  
by James G. Miller

Published in Journal of the American Medical Association v179 n12 p940-3 (24 Mar 1962)  
Presented at the Session on Medical Aspects of Automobile Injuries and Deaths, 110th Annual Meeting, AMA, N. Y. 27 Jun 1961.

Tests measured the effects of sedatives, hallucinogens, amphetamines, parasympatholytic and tranquilizers upon skills used in driving a car and in some other related activities. Included driver training test and visual tests given to normal subjects and patients. Effects of various dosages of drugs were determined. Conclusions were that this type of objective test should be used regularly in evaluating new compounds that can affect the central nervous system.

Search terms: Tranquilizers\*, Sedatives\*, Driver tests,

### 3/7 Drugs Other Than Alcohol (Cont.)

HS-004-880 (Cont.)

Central nervous system\*, Driver physical fitness, Vision, Driving tasks, Parasympatholytics\*, Amphetamines\*, Driver behavior, Test equipment, Antihistaminics\*, Hallucinogens\*

HS-004 881 Fld. 3/7,3/1

ALCOHOL + DRUGS  
by R. B. Forney,  
F. W. Hughes

Published in *Traffic Safety* v67 n6 p22-4, 34-6 (Jun 1967)

Discusses reactions which may occur when a driver takes a drug and then has a few drinks, for example, morphine and caffeine potentiate effects of alcohol, codeine does not. Barbiturates, tranquilizers, narcotics, etc. are discussed.

Search terms: Medical treatment, Synergism\*, Alcoholism, Barbiturates\*, Driver intoxication, Tranquilizers\*, Narcotics\*, Amphetamines\*, Test equipment, Antidepressants\*

HS-004 968 Fld. 3/4,3/1,3/7

THE AVERAGE MAN--AND THE NON-AVERAGE DRIVER!  
by Ben Berkey

Published in *California Highway Patrolman* v32 n11 p7, 16, 32, 36 (Jan 1969)

Attributes the highway safety problem to reckless drivers, who violate traffic laws, drive irrationally, drive while drunk or drugged, and use cars to gain a feeling of power.

Search terms: Reckless driving, Careless driving, Drinking drivers, Drugs\*, Psychological factors, Driver behavior, Driver physical fitness, Traffic laws, Highway safety, Wrong way\*

HS-004 971 Fld. 3/7,2/11,1/3

DRIVING RECORDS OF PERSONS  
ARRESTED FOR ILLEGAL DRUG USE

by Alfred Crancer, Jr.,  
Dennis L. Quiring  
Washington. Dept. of  
Motor Vehicles, Olympia

May 1968 13p  
Report no. 011

Records of 302 persons arrested for drug use were compared with 687,228 driving records of others. Drug users were classified as narcotic users, dangerous drug users, and marihuana users. Each of these groups had higher accident and violation rates than the general population. They had more reckless, hit and run, and negligent driving, but fewer violations for speeding, failure to stop, and failure to yield. Injury and property damage rates were comparable to the population. None had been involved in fatalities.

Search terms: Washington\*, Driver records, Driver physical fitness, Drugs, Accident rates, Traffic violations, Reckless driving, Careless driving, High speed, Injury factors, Property damage, Fatalities, Narcotics\*, Marijuana\*, Hit and run accidents, Right-of-way (traffic rules)\*

AVAILABILITY: From corporate author

HS-005 122 Fld. 3/7; 5/0

DRUGS: THE DEADLY HIGHWAY MENACE

by Bernie Swart, Jack Lyndall, Bruce Cross, Fran Ridgway, Kay Gallagher, Ed Addeo, Steve Ludwig

Published in *Fleet Owner* v59 n5 p75-90 (May 1964)

The increasing use of amphetamine drugs by truck drivers is a major threat to highway safety. It may be the cause of the increase in single-vehicle truck accidents. The ways in which these drugs are sold to truck drivers, the reasons they are used,

and the efforts of the Food and Drug Administration to control the problem are discussed.

Search terms: Amphetamines\*, Truck drivers, Food and Drug Administration\*, Single vehicle accidents, Accident causes, Highway safety, Law enforcement\*, Truck accidents

HS-005 278 Fld. 3/1; 3/7

EFFECTS OF ALCOHOL IN COMBINATION WITH DRUGS

by Robert B. Forney; Francis W. Hughes

Published in *Traffic Digest and Review* v12 n5 p22-4 (May 1964) 14 refs

Insufficient attention has been paid to the effects of combining alcohol with drugs, especially tranquilizers. While such drugs diminish anxiety, they also diminish performance. Tests on humans and animals to determine these effects are described. The difficulties of testing impairment of driving ability are discussed.

Search terms: Drinking drivers; Driver skills; Driver physical fitness; Drugs; Tranquilizers\*; Driver intoxication; Alcoholic beverages; Animal experiments\*; Synergism\*

HS-005 280 Fld. 3/1; 3/7

THE USE OF ELECTROENCEPHALOGRAPHY TO MEASURE RECOVERY TIME AFTER INTRAVENOUS ANAESTHESIA

by A. Doenicke; J. Kugler; A. Schellenberger; Th. Guertner

Published in *British Journal of Anaesthesia* v38 p580-590 (Aug 1966) 22 refs

Depth of anesthesia and tendency to sleep were tested following the administration of various anesthetics. Results suggest that after intravenous barbiturate anesthesia for out-patient procedures, patients should be cautioned against driving or drinking alcohol for 24 hours. The potentiating effect of a small quantity of alcohol can be discerned even after 12 hours in the case of some anesthetics.

Search terms: Anesthetics\*; Barbiturates\*; Driver physical fitness;

### 3/7 Drugs Other Than Alcohol (Cont.)

HS-005-280 (Cont.)

Alcoholic beverages; Electroencephalography\*; Synergism\*

HS-005 353 Fld. 3/1; 3/7; 1/3

#### A STUDY: ROLES OF ALCOHOL, DRUGS AND ORGANIC FACTORS IN FATAL SINGLE VEHICLE ACCIDENTS

by Harold W. Sullivan

Published in *Police Chief* v35 n3 p16, 18, 20 22 (Mar 1968)

Report version is available from CFSST as PB-175-942 (see HS-000 998).

A study was made of 1,474 single vehicle accidents in California; 155 of these deaths were attributed to natural causes and the rest to injuries. For 772 cases a blood alcohol sample could be obtained, and figures are given for sex, age, accident record, and other characteristics of these drivers. The problems of drugs and deaths from natural causes are outlined briefly.

Search terms: Single vehicle accidents; Accident analysis; Fatalities; Blood alcohol level\*; Sex factor in accidents; Age factor in accidents; Driver records; Drugs; Driver characteristics; California\*; Alcoholic beverages; Fatalities from natural causes\*

HS-005 382 Fld. 1/3; 5/6; 3/1; 3/7

#### THE ROLES OF CARBON MONOXIDE, ALCOHOL, AND DRUGS IN FATAL SINGLE CAR ACCIDENTS (ADVANCE REPORT)

California. Dept of Highway Patrol, Sacramento

Oct 1965 30p 10 refs

Prepared in cooperation with Bureau of Public Roads, Washington, D.C.

Carbon monoxide was found to be a negligible factor. About 12% of the fatalities studied were taking drugs, but the detection process was not complete. Blood alcohol level was .10% or more in 70% of the male and 40% of the female drivers. There was

a considerable incidence of arrests for drunkenness and other criminal behavior in the previous records of these subjects. About 10% of the cases were drivers who died from natural causes just before their accidents; these were middle-aged and elderly male drivers. Study was based on 380 subjects.

Search terms: Carbon monoxide; Fatalities; Drugs; Blood alcohol levels\*; Sex factor in accidents; Driver records; Drinking drivers; Driver intoxication; Adult drivers; Aged drivers\*; Accident studies; Single vehicle accidents; Accident factors; Case reports\*; Carboxyhemoglobin\*; Heart diseases\*; Alcoholic beverages; Diabetes mellitus\*; Fatalities from natural causes\*

AVAILABILITY: Corporate author

HS-005 443 Fld. 3/7; 3/1

#### THE EFFECTS OF MARIJUANA AND ALCOHOL ON SIMULATED DRIVING PERFORMANCE

by Alfred Crancer, Jr.; James M. Dille; Jack C. Delay; Jean E. Wallace; Martin D. Haykin

Washington. Dept. of Motor Vehicles, Olympia; Washington Univ., Seattle

Published in *Science* v164 n3881 p851-4 (16 May 1969)

Apr 1969 14p 10 refs  
Report no. 021

Study was conducted to determine effect of a "normal social marijuana high" on simulated driving performance. Experienced marijuana smokers accumulated significantly more speedometer errors on the simulator while the same subjects intoxicated from alcohol accumulated more accelerator, brake, signal, speedometer, and total errors but not steering errors. Impairment in simulated driving performance is not a function of increased marijuana dosage.

Search terms: Drugs; Drug addiction; Marijuana\*; Drinking drivers; Driver intoxication; Driving simulation; Driver performance; Automobile simulators; Speed patterns; Braking; Steering (driving); Acceleration patterns; Alcoholic beverages

AVAILABILITY: Washington Dept. of Motor Vehicles, Olympia, or journal

HS-005 792 Fld. 3/1; 3/7

#### POLICE LAUNCH CAMPAIGN AGAINST DRINKING DRIVERS

Anonymous

Published in *Law & Order* v17 n6 p48-50, 52, 55-6 (Jun 1969)

The New York Traffic Council is conducting a campaign to combat the problem presented by drivers under the influence of drugs especially alcohol. Eight regional two-day seminars are part of the program. The governor and police officials are urging the legislators to pass stiffer laws against drinking drivers. Present New York law is explained. Other drugs are discussed briefly as well.

Search terms: New York\*; Drugs; Alcoholic beverages; Drinking drivers; Driver intoxication; Intoxication; Blood alcohol levels\*; Chemical analysis; Legislation; Law enforcement\*; Police

HS-005 793 Fld. 3/1; 3/7

#### COMPARISON OF THE EFFECTS OF MARIJUANA AND ALCOHOL ON SIMULATED DRIVING PERFORMANCE

by Alfred Crancer, Jr.; James M. Dille; Jack C. Delay; Jean E. Wallace; Martin D. Haykin

Published in *Science* v164 n3881 p851-4 (16 May 1969) 8 refs

The effects of marijuana, alcohol, and no treatment on simulated driving performance were determined for experienced marijuana smokers. Subjects experiencing a "marijuana high" accumulated more speedometer errors but no significant differences in accelerator, brake, signal, steering, and total errors than when under control conditions. The same subjects intoxicated from alcohol accumulated significantly more accelerator, brake, signal, speedometer, and total errors but no significant difference in steering errors than when under normal conditions.

Search terms: Marijuana\*; Alcoholic beverages; Driver intoxication; Driving simulation;

### 3/7 Drugs Other Than Alcohol (Cont.)

HS-005-793 (Cont.)

Driver performance; Intoxication; Steering (driving); Braking; Speed patterns; Signals; Acceleration patterns

HS-006 301 Fld. 3/7; 3/1

#### DRUGS, DRIVING, DANGER!

by Harris Edward Dark

Published in *Analogy* p19-21 (Winter 1968)

Drivers should be warned of the potential danger inherent in certain drugs—barbiturates, tranquilizers, analgesics, antihistamines. Especially when combined with alcohol, many drugs have a synergistic effect and make a driver too sleepy to drive safely.

Search terms: Drugs; Alcoholic beverages; Medical conditions; Accident causes; Synergism; Driver physical fitness; Barbiturates; Tranquilizers; Antihistamines; Analgesics

HS-006 302 Fld. 3/7; 3/1

#### PSYCHOACTIVE DRUGS AND TRAFFIC ACCIDENTS

by Reginald G. Smart; Wolfgang Schmidt; Karen Bateman

Published in *Journal of Safety Research* v1 n2 p67-73 (Jun 1969) 24 refs

The accident rates of 30 psychoactive drug abusers seen at a clinic in Toronto were examined. The group included persons addicted to or dependent on barbiturates, tranquilizers, and stimulants; half were also dependent on alcohol. The psychoactive drug abusers had accident rates about twice as high as expected for their age, sex, and driving exposure. Most of the excess was attributed to amphetamines.

Search terms: Accident factors; Drugs; Amphetamines; Accident studies; Accident rates; Alcoholism; Barbiturates; Tranquilizers; Stimulants; Drug addiction; Age factor in accidents; Sex factor in accidents; Driving experience; Toronto

HS-006 466 Fld. 3/7

#### THE EFFECTS OF DRUGS ON THE DRIVER

by W. H. Neil

Published in *Traffic Safety* v62 n4 p26 (Apr 1963)

Excerpt from "Influence of Drugs on Driving" published in *Texas State Journal of Medicine*, Feb 1962.

The relative importance of drugs and medications in traffic accidents, injuries, and deaths should be considered before legislation in this field is advocated. One avenue of investigation is an analysis of automobile accidents regarding the possible influence of drugs on accidents. Problems regarding this approach are briefly considered.

Search terms: Physiological effects; Drugs; Accidents; Injuries; Fatalities; Legislation; Driver licensing; Driver restrictions

HS-006 467 Fld. 3/7; 3/1

#### INFLUENCE OF DRUGS ON DRIVING

by W. H. Neil

Published in *Texas State Journal of Medicine* v58 p92-7 (Feb 1962) 18 refs

Excerpted in *Traffic Safety*, Apr 1963 as THE EFFECTS OF DRUGS ON THE DRIVER

Although many drugs can influence a person's ability to drive safely, no statistics indicate the extent to which drugs (except alcohol) are a causative factor in motor vehicle accidents. Until demonstrative statistics can be compiled, no legislation is practical. Physicians can only warn patients of inherent dangers in taking drugs and driving.

Search terms: Alcoholic beverages; Drugs; Accident causes; Injuries; Fatalities; Legislation; Driver licensing; Driver restrictions; Physiological effects; Driver physical fitness

HS-006 695 Fld. 3/7

#### THE INFLUENCE OF TWO SELECTED TRANQUILIZERS ON DRIVING SKILLS

by Warren J. Huffman; Aurelio E. Florio; Jobe L. Payne; Floyd E. Boys

Published in *American Journal of Psychiatry* v119 n9 p885-6 (Mar 1963)

A study was made of the effects of a tranquilizer, hydroxyphenamate, on 25 young adults. Reaction time, vision, hand steadiness, braking and stopping distances were measured. There was no significant effect on the performance of the subjects, either at normal or double the normal dosage.

Search terms: Reaction time; Vision tests; Driver physical fitness; Young adult drivers; Laboratory tests; Driver performance studies; Tranquilizers; Braking distance; Stopping distance

### 3/8 ENVIRONMENTAL EFFECTS

HS-004 313

HUNDREDS OF MOTORISTS  
ARE KILLED BY CARBON  
MONOXIDE

Sep 1963 2 p.

AVAILABILITY: Published in  
Public Health (Johannesburg)  
p30,32 (Sept 1963)

Many people die in the United States and Canada from accidents attributed to driver fatigue, drowsiness, or inattention. Statistics are not kept on carbon monoxide deaths nor are many patients tested for CO in blood as they are for alcohol. Explains ways in which CO may leak into car and be breathed by driver, causing death or brain damage, and first aid measures for CO victims.

HS-004 384 Fld. 3/8

ENVIRONMENTAL HAZARDS ASSOCIATED WITH A RADIO FREQUENCY  
PACEMAKER

by L. Blieden, E. H. Frei,  
I. M. Barr, H. N. Neufeld  
Grant 497

Published in Journal  
of Cardiovascular Surgery

(Torino) v9 p49-53 (Jan-  
Feb 1968)

Cardiac pacemakers are increasingly used in heart therapy. Potentially dangerous environmental agents were tested on a radio-frequency pacemaker. Tests were performed experimentally and the devices which produced interference were tested in vivo on dogs in which atrioventricular block had been produced. Spark plugs and distributor of a motor car produced an increase in the rate of the pacemaker.

Search terms: Spark  
plugs, Pacemaker (cardiac)  
Health hazards, Heart  
block, Distributors, Dogs,  
Animal experiments

HS-004 664 Fld. 5/6,3/8

EXHAUST SYSTEM DESIGN--ART  
OR SCIENCE?

by C. D. Shepherd  
Arvin Industries, Inc.,  
Columbus, Ind.

13-17 Jan 1969 4p

Report no. SAE-690006

Presented at International  
Automotive Engineering  
Congress, Detroit, Mich.

Noise pollution, like air pollution, is beginning to attract the attention of regulatory agencies. Engineers and designers are increasingly concerned with reducing the outside noise level of auto exhaust systems. New methods of doing this and new devices and materials for measuring firing and sound level frequencies are discussed. The use of silencing devices is included.

Search terms: Noise  
reduction, Motor vehicle  
design, Noise (sound),  
Exhaust systems, Silencers\*

AVAILABILITY: From SAE

HS-004 716 Fld. 5/6,3/8

CARBON MONOXIDE CONTROL IN  
A HIGH HIGHWAY TUNNEL

by Joseph M. Miranda,  
Virgil J. Konopinski,  
Ralph I. Larsen  
National Center for Air  
Pollution Control,  
Cincinnati, Ohio

Published in Archives of  
Environmental Health v15  
n1 p16-25 (Jul 1967) 37refs

Physiological effects of hypoxia (lack of oxygen) on persons--in good health, with anemia, using alcoholic beverages, during pregnancy, with cardio-respiratory ailments--are considered in relation to high elevation traffic. Recommends carbon monoxide concentrations limits of 25-50 ppm and safety guidelines for driving in the 1.6 mile long, 2 mile high vehicular tunnel at Straight Creek (near Denver).

Search terms: Tunnels,

Hypoxia\*, Oxygen\*, Highway design, Construction, Ventilation, Exhaust emission control, Carbon monoxide, Elevation\*, Oxyhemoglobin dissociation\*, Acclimatization\*, Safety measures, Smoking factor in driving, Carboxyhemoglobin\*, Hemoglobin\*, Equations

HS-800 030 Fld. 3/12,3/8

GLARE AND DRIVER VISION  
REPORT

by Merrill J. Allen  
Indiana Univ., Bloomington

1968 66p

Contract FH-11-6550

Study to measure daylight glare produced or modified by motor vehicles, to survey current knowledge of glare, and to devise ways of measuring glare produced by a given vehicle. Tests used 47 subjects in age range 18-82. Laboratory tests measured glare from sources such as windshield dirt, sky, hood and chromium in simulated hazy bright daylight. Five new 1968 American automobiles from different manufacturers were used. Moving automobile tests were made at 25mph with driver and two passengers in the front seat recording observations of randomly presented targets against varying glare sources. Results showed that effects of each glare source were cumulative, and glare slowed reaction time. Glare and glossy surfaces should be removed from the driver's field of view.

Search terms: Glare, Motor vehicles, Visual perception, Driver vision, Driving simulation, Laboratory experiments, Gloss, Windshields, Daylight\*

AVAILABILITY: CFSTI

HS-004 826 Fld. 3/8

THE EVALUATION OF NOISE  
FROM FREELY FLOWING ROAD  
TRAFFIC

### 3/8 Environmental Effects (Cont.)

#### HS-004-826 (Cont.)

by D. R. Johnson,  
E. G. Saunders  
National Physical Lab.,  
Teddington, Mddlx. (England)

[1967] 36p 15 refs  
Report no. N68-24777  
NPL-Aero-Ac-29

Roadside surveys of traffic noise were studied. It was found that a simple extension of the prediction method permitted determination of total noise exposure from noise level and duration factors. Variables included: velocity, commercial trucks, and gradient.

Search terms: Motor vehicle noise, Traffic flow, Speed, Mathematical analysis\*, Road grades, Traffic density

AVAILABILITY: From  
CFSTI as N68-24777

#### HS-004 863 Fld. 1/3,3/8

CARBON MONOXIDE AND HUMAN HEALTH  
by John R. Goldsmith,  
Stephen A. Landaw

Published in *Science* v162  
n3860 p1352-9 (20 Dec 1968)  
61 refs

A possible role of carbon monoxide in motor vehicle accidents is suggested by data which show higher levels of carboxyhemoglobin (COHb) in drivers involved in accidents than in policemen and in other occupationally exposed population segments.

Search terms: Air pollution, Smoking factor in driving, Health hazards, Carbon monoxide, Carboxyhemoglobin\*, Exhaust emissions, Accident causes

#### HS-005 027 Fld. 3/8,5/2,5/6

CARBON MONOXIDE AND THE SCHOOL BUS  
by A. G. Amiro,  
E. F. Sloan

Published in *Traffic Safety* v68 n3 p28-9,37  
(Mar 1968)

Study of Alabama school buses shows correlation of defective engine exhaust system and the presence of carbon monoxide. Installation of a complete engine exhaust system on each bus is recommended. Drivers should be alerted to the dangers of carbon monoxide poisoning.

Search terms: School buses, Carbon monoxide, Defective vehicles, Exhaust systems, Exhaust emission control, Poison control

#### HS-005 089 Fld. 5/6, 1/3, 3/8

PHOTOCHEMICAL AIR POLLUTION AND AUTOMOBILE ACCIDENTS IN LOS ANGELES: AN INVESTIGATION OF OXIDANT AND ACCIDENTS, 1963 AND 1965

by Hans K. Ury

Published in *Archives of Environmental Health* v17 p334-42 (Sep 1968)

A statistically significant relationship exists between increasing oxidant levels and increase in motor vehicle accidents. However, this association might be due to other air pollution variables present at the same time as oxidant. The statistical methods used are discussed.

Search terms: Accident rates, Statistical analysis, Motor vehicle accidents, Air pollution Los Angeles\*, Accident factors, Smog, Oxidizers\*

#### HS-005 183 Fld. 5/4; 3/8; 2/7

AIR POLLUTION--THE PROBLEM AND THE RISKS

Anonymous

Published in *SAE Journal* v76 n5 p47-52 (May 1968)

Based on Part 1 of the report of the Panel on Electrically Powered Vehicles to the Commerce Technical Advisory Board (HS-000 722).

Discusses the sources of air pollution

and summarizes the known facts about contaminants related to the auto: carbon monoxides, hydrocarbons, nitrogen oxides, oxidants, and lead compounds. The first three of 16 recommendations to the government on air pollution are also discussed: the national goal should be an atmosphere with no adverse effects on health; a research program should be established in the Environmental Science Services Administration to determine the relationships between pollution and weather; and the Department of Health, Education, and Welfare should develop information dealing with the effects of air pollution on health.

Search terms: Air pollution effects; Air pollution control; Exhaust emissions; Carbon monoxide; Hydrocarbons; Lead (metal)\*; Oxidizers\*; Nitrogen oxides\*; Environmental factors\*; Public health\*; Weather; Department of Health, Education, and Welfare\*; Environmental Science Services Administration\*

#### HS-005 184 Fld. 5/6; 3/8; 2/7

TECHNOLOGY AND THE CONTROL OF AUTOMOTIVE AIR POLLUTION

Anonymous

Published in *SAE Journal* v76 n6 p42-51 (Jun 1968)

Based on Part 2 of the report of the Panel on Electrically Powered Vehicles to the Commerce Technical Advisory Board (HS-001 275).

Discusses the gasoline and diesel engines and mass transit systems in relation to air pollution. Includes the use of unconventional systems such as electric cars. Recommendations 4-7 of a series of 16 recommendations to the government on air pollution are outlined: that the government should continue to establish standards for auto emission control and for lead content in gasoline, and that the effects of atmospheric lead on health should be studied; that emission standards for trucks and buses should be set; and that support for mass transportation research should be increased.

Search terms: Diesel engines; Automobile engines; Exhaust emissions; Lead (metal)\* Hydrocarbons;

### 3/8Environmental Effects (Cont.)

HS-005-184 (Cont.)

Carbon monoxide; Air pollution control; Standards; Internal combustion engines; Electric automobiles; Public health; Trucks; Buses (vehicles); Mass transportation; Gasoline

HS-005 237 Fld. 3/8; 5/1

#### BRAKE LINING DECOMPOSITION PRODUCTS

by Jeremiah R. Lynch

Published in *Journal of the Air Pollution Control Association* v18 n12 p824-6 (Dec 1968)

Because investigators have found asbestos bodies in the lungs of urban residents who were not occupationally exposed to asbestos, a relationship between the carcinogenic properties of asbestos and urban excess of lung cancer was suggested. Possible source of the fibers is from brake linings. Brake testing laboratory methods were used to test fiber emission from a variety of friction products. Only a small amount of the asbestos escaped as free fiber while the remainder was transformed into some other nonfibrous mineral. A significant release of free fiber occurred only under conditions extreme enough to produce brake failure. This seems to be an inconsequential factor in urban air pollution.

Search terms: Air pollution; Health hazards; Brake linings; Carcinogens\*; Brake temperature; Drum brakes; Urban areas; Friction tests; Laboratory tests; Asbestos\*; Motor vehicle brakes; Brake failures\*; Disk brakes; Lung diseases\*

HS-005 238 Fld. 3/8; 5/6

#### BIOLOGICAL EFFECTS OF URBAN AIR POLLUTION. III. LUNG TUMORS IN MICE

by Murray B. Gardner

Published in *Archives of Environmental Health* v12 n3 p305-13 (Mar 1966) 28 refs

Contract PHS-Saph-76476

Urban air pollution may play a role in the pathogenesis of lung cancer. The effects of Los Angeles smog on mice were studied at stations near

freeways, where automotive exhaust level was high. Results indicate that the ambient Los Angeles atmosphere does possess a definite though slight activity in promoting tumors in mice.

Search terms: Carcinogens\*; Neoplasms; Animal experiments; Los Angeles\*; Air pollution; Nitrogen compounds\*; Hydrocarbons; Carbon monoxide; Smog; Exhaust emissions; Freeways; Lung diseases\*

HS-005 239 Fld. 3/8; 5/6

#### CARBOXYHEMOGLOBINEMIA IN PARKING GARAGE EMPLOYEES

by James M. Ramsey

Published in *Archives of Environmental Health* v15 n5 p580-3 (Nov 1967) 14 refs

Carboxyhemoglobin (COHb) levels were compared for parking garage attendants as an exposed group with those of a controlled group. The COHb level of the attendants after a day's exposure presented an extremely significant difference from controlled levels. Occupational exposure was more instrumental in producing COHb than smoking.

Search terms: Carboxyhemoglobinemia\*; Carboxyhemoglobin\*; Blood analysis\*; Carbon monoxide; Parking garages\*; Smoking\*; Health hazards; Air pollution

HS-005 585 Fld. 3/8; 4/8

#### MEASUREMENT AND CONTROL OF ROAD TRAFFIC NOISE

by C. G. Bottom; D. M. Waters

Published in *Traffic Engineering and Control* v10 n11 p550-3 (Mar 1969) 8 refs

The cost of preventing deterioration of the environment through noise intrusion should be included in the planning of transportation systems. This article discusses measurement techniques, develops noise level standards and a traffic noise index.

Search terms: Noise reduction; Noise (sound); Acoustic measurement\*; Hearing\*; Motor vehicle noise; Traffic characteristics; Costs\*; Transportation planning

Published in *Journal of Sound and Vibration* v7 n2 p247-62 (1968) 20 refs

HS-005 759 Fld. 3/8; 5/6

#### THE AIR QUALITY ACT OF 1967

Anonymous

Published in *Journal of the Air Pollution Control Association* v18 n2 p62-71 (Feb 1968)

The background and provisions of an act for air pollution control are explained. The part played by vehicles and fuels in air pollution is included. Research, programs, enforcement, and costs are outlined. The complete text of the act is included.

Search terms: Air Quality Act of 1967\*; Air pollution laws; Fuels; Motor vehicles; Costs\*; Law enforcement\*; Air pollution control; Evaporative emissions\*; Exhaust emissions\*; Fuel additives\*

HS-005 805 Fld. 3/8

#### THE EVALUATION OF NOISE FROM FREELY FLOWING ROAD TRAFFIC

by D. R. Johnson; E. G. Saunders

Published in *Journal of Sound and Vibration* v7 n2 p287-309 (1968) 16 refs

Roadside surveys of the noise emitted by freely flowing traffic have been made on various types of sites. The results provide an indication of present-day traffic noise conditions against which future comparisons may be made and also show how basic variables such as traffic density, speed and distance from the roadside affect the observed pattern of noise. Agreement between the experimental data and a theoretical analysis of simplified traffic flow forms the basis of a method for predicting the median sound level produced under any given set of traffic conditions.

Search terms: Motor vehicle noise; Traffic noise levels\*; Field tests; Traffic data analysis; Speed; Heavy duty vehicles; Test equipment; Acoustic measurement\*; Traffic flow; Road grades\*; Traffic density; Forecasting; Traffic characteristics

### 3/8 Environmental Effects (Cont.)

HS-005 806 Fld. 3/8

#### TRAFFIC NOISE

by R. J. Stephenson; G. H. Vulkan

Details are given of two experiments on measuring the noise contributions made by different types of vehicles. The importance of lorries and buses in contributing to high noise levels is discussed as are the effects of gradients and speed. Special reference is made to the use of barriers to mitigate the effect of traffic noise. Greater London Council policy regarding traffic noise is outlined.

Search terms: Motor vehicle noise; Traffic noise levels\*; Trucks; Buses (vehicles); Speed; Traffic data analysis; Time factors\*; Vehicle size; Acoustic measurement\*; Traffic volume; Traffic characteristics; Road surfaces; London\*; Test equipment; Field tests; Road grades\*; Barriers: Noise reduction.

HS-005 807 Fld. 3/8

#### SUBJECTIVE RESPONSE TO ROAD TRAFFIC NOISE

by I. D. Griffiths; F. J. Langdon

Published in *Journal of Sound and Vibration* v8 n1 p16-32 (1968) 31 refs

A study consisting of acoustic measurements at fourteen sites in the London area and 1200 interviews dealing with the effects of the noise conditions has been carried out with the object of developing acceptability criteria for traffic noise. Individual dissatisfaction scores correlated poorly with the physical measures. Disturbances of various activities was shown to be related to noise levels and the increasing extent of this effect with worsening of noise conditions was used to validate the scale of dissatisfaction.

Search terms: Motor vehicle noise; London\*; Attitudes; Traffic noise levels\*; Tolerances; Field tests; Public opinion; Tape recordings\*; Traffic data analysis; Acoustic measurement\*; Psychological factors; Forecasting.

HS-006 056 Fld. 2/0; 3/8

#### LEAD INTOXICATION IN AUTO- MOTIVE SPORTS

by M. A. Polacek; Daniel P. Collins

13 refs

An epidemiological survey revealed improper exposure to engine cleaning solvents containing high lead concentrations became a new source of lead intoxication. Race car drivers and mechanics showed laboratory and clinical evidence of significant lead exposure.

Search terms: Blood lead levels\*; Automobile engines; Lead (metal)\*; Laboratory tests; Cleaning agents\*; Racing automobiles; Lead poisoning\*; Health hazards; Blood analysis\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968 p181-91 (HS-006 046)

HS-006 073 Fld. 3/8

#### HAZARDS IN DIESEL SMOKE

by B. P. Sinha; S. Pande

Published in *Journal of Indian Medical Association* v49 n7 p330-2 (1 Oct 1967)

A project using four mongrel dogs was conducted to study the effect of diesel smoke on haemopulmonary systems. The animals, subjected to diesel fume exposures in a closed chamber every day for fifteen minutes for five to eight weeks, developed anorexia, dermatitis, conjunctivitis, scleritis, ulceration in the extremities, generalized wasting, dullness, tonic and clonic convulsions, emphysema, pulmonary edema, and death. Autopsies revealed lung and liver congestions. Microscopic findings listed included congestions of pulmonary vessels.

Search terms: Laboratory experiments\*; Animal experiments\*; Autopsies; Smoke\*; Pathology\*; Skin; Medical conditions; Eye (anatomy); Respiratory system; Neurologic manifestations\*; Liver diseases\*; Physiological effects\*; Fatalities; Diesel fuels\*; Exhaust emissions; Hydrocarbons; Nitrogen oxides\*

HS-006 195 Fld. 3/12; 3/8; 1/3; 2/7

#### CALIFORNIA'S REDUCED VISI- BILITY STUDY HELPS CUT DOWN TRAFFIC ACCIDENTS WHEN FOG HITS AREA

by James E. Wilson

Published in *Traffic Engineering* v35 n11 p12-4, 44-51, 53 (Aug 1965)

Various means of giving advance warning to drivers of the need for greater driving caution during periods of reduced visibility have been studied. Studies were undertaken after a series of chain reaction crashes. Ways of affecting the driving behavior of motorists who disregard reduced visibility were tested. Signs, speed limits, tailgating, headway, traffic markings, increased patrol car surveillance were studied.

Search terms: Fog; Driving conditions; Visibility; California\*; Reduced visibility; Tailgating; Headway\*; Traffic markings; Law enforcement\*; Police traffic services; Highway signs; Speed limits; Speed reduction; Driver behavior; Accident causes

### 3/9 IMPAIRED DRIVERS

HS-004 342

SUBCLAVIAN-STEAL SYNDROME  
AND MOTOR ACCIDENTS  
by Bernard Wortreich,  
Mark Mozes, Harry Bank

Published in Lancet v2  
n7515 p533-4 (9 Sep 1967)

Two patients, with radiologically proven subclavian-steal syndrome, while driving a car had acute episodes of cerebral ischaemia which caused accidents. Reversal of flow in a vertebral artery will under certain circumstances give rise to neurological disturbances. The commoner features are a transient attack of dizziness, true vertigo, blurring of vision, dysarthria, and actual syncope. This situation may not ordinarily endanger the patient, but may constitute a danger and prove disastrous if the attack comes on while he is driving a car.

Search terms: Case reports, Speed disorders, Subclavian steal syndrome, Traffic accidents, Vertigo, Vision disorders

HS-004 462 Fld. 5/4,3/9

AUTOMOBILE CONTROLS FOR  
PARAPLEGICS  
by Bernard Talbot

Published in Canadian Nurse  
v62 p31 (Mar 1966)

Two types of automobile controls--vacuum and mechanical--have been developed for the paraplegic. Mechanical control which permits gradual, calculated acceleration & braking--in sequence or combination--is becoming increasingly popular.

Search terms: Handicapped drivers, Paraplegia, Automobiles, Control equipment

HS-004 486 Fld. 3/6,3/9

FUNCTIONS OF MEDICAL  
ADVISERS IN LICENSING  
DRIVERS  
by George A. Spendlove

Published in Public Health Reports v82 n12 p1071-6  
(Dec 1967)

Means should be devised to identify potentially dangerous drivers who are physically, mentally, or emotionally unfit. A medical advisory board can help identify the unfit and also prevent denial of driver license to handicapped persons who are safe drivers. Implied consent laws are the best way to control the drinking driver.

Search terms: Drinking drivers, Implied consent laws, Problem drivers, Emotions, Driver physical fitness, Mental illness, Driver license standards, alcoholism, Handicapped drivers, Driver license denial, Physicians

HS-004 487 Fld. 3/9,3/6

EPILEPSY AND DRIVING  
Anonymous

Published in British Medical Journal v1 n5338 p510 (25 Feb 1967)

Discusses British case in which a man who had no attacks of epilepsy since 1963 was still refused a driver's license because he takes the drugs which prevent attacks. The courts are likely to hold that taking treatment is proof of suffering from the disease and the applicant must prove the treatment is unnecessary.

Search terms: Driver license standards, Epilepsy, Driver physical fitness, Great Britain

HS-004 488 Fld. 3/9,3/6

THE MEDICALLY UNFIT DRIVER  
AND THE ESTABLISHMENT OF  
BASIC PHYSICAL STANDARDS  
FOR LICENSURE  
by Robert D. Sparks

Published in Journal of the Louisiana State Medical Society v119 n9 (Sep 1967)

Presents eight recommendations, mostly dealing with "high risk" drivers in Louisiana. Drivers addicted to alcohol or drugs or suffering from certain physical or mental conditions should be subjected to medical examination before licensing.

Search terms: Driver license standards, Driver physical fitness, Handicapped drivers, Accident risks, Medical examination, Motor vehicle inspection, Louisiana, Drug addiction, Alcoholism, Drinking drivers, Mental illness

HS-004 518 Fld. 1/3,3/9

THE CONTRIBUTION OF MEDICAL  
IMPAIRMENT TO TRAFFIC  
ACCIDENTS  
by Julian A. Waller

1967 17 refs

Clinically obvious impairment from chronic conditions (other than alco-

### 3/9 Impaired Drivers (Cont.)

HS-004-518 (Cont.)

holism) is not a frequent accident cause. However, more subtle physiological changes related to aging appear to be a contributory factor in substantial proportion of accidents. A concerted effort should be made to simplify the driving task; impaired pedestrians should be separated from traffic.

Search terms: Medical factors, Handicapped drivers, Traffic accidents, Age factor in

by E. Grattan, G. O. Jeffcoat

Published in British Medical Journal v1 n5584 p75-9 (13 Jan 1968)

A review is given of some of the published and unpublished information dealing with medical factors in road accidents. Three investigations undertaken at the Road Research Laboratory are described, involving more than 10,000 accident cases. It is concluded that the overall rate of incidence of sudden illness in drivers or motorcyclists as a definitive cause of accidents is low, about 1 per 1,000. It is more difficult to draw conclusions about the relation of chronic disease or disability to accidents, but the rate of incidence is probably not high.

Search terms: Driver physical fitness, Accident causes, Accident data, Accident data, Motor vehicle accidents, Handicapped drivers, Motor vehicle accidents

rules about driver license issuance are not suitable. Regulations in New Jersey are outlined and compared to those in other states. The problem of insurance for the epileptic driver who can get a license is discussed. The gist of expert opinion was that the mandatory reporting of epilepsy does more harm than good and is of no significant value for highway safety. Eliminating this from New Jersey law is recommended.

Search terms: Driver license standards, New Jersey\*, Driver license laws, Driver physical fitness, Handicapped drivers, Insurance, Medical factors, Legal responsibility\*, Epilepsy\*, Diseases, Highway safety

HS-004 546 Fld. 3/9

A SYMPOSIUM ON MEDICAL CONDITIONS CONSTITUTING A HAZARD IN DRIVING  
by Ruth W. Baldwin,  
L. R. Schoolman, Philip Whittlesey, H. F. Kinnamon, A. N. Doudoumopoulos, Barbara Hulfish, Irene L. Hitchman

Published in Maryland State Medical Journal v15 p55-8 (Mar 1966)

Reports on the experience of the Medical Advisory Board in Maryland in examining possibly hazardous drivers, the majority of whom were recommended for a license. Most frequent problems are epilepsy, diabetes, cardiac disabilities, orthopedic problems, mental retardation, psychiatric disorders, neurological problems, and alcoholism.

Search terms: Handicapped drivers, Driver physical fitness, Driver license standards, Epilepsy\*, Diabetes mellitus\*, Mental illness, Heart diseases\*, Orthopedics\*, Alcoholism, Neurologic manifestations\*, Diseases\*

HS-004 652 Fld. 3/9

EPILEPSY, THE DOCTOR AND THE LAW. DIAGNOSIS, LEGAL REPORTING AND INSURANCE PROBLEMS, A SYMPOSIUM  
by Ira S. Ross, Frederic Gibbs, William P. Braun, George Schwoebel, John A. Gleeson, Roscoe L. Barrow

Published in Academy of Medicine of New Jersey Bulletin v10 n1 p5-39 (Mar 1964)

Program was assisted by The Prudential Insurance of America, Smith, Kline and French Labs., and Hoffmann-LaRoche, Inc.

Epilepsy is discussed under five topics: medical aspects, medico-legal responsibilities driving aspects, driver's legal responsibility, and driver licensing laws and insurance. Epilepsy is presented as a complex condition in which simple

HS-004 699 Fld. 3/6,3/9

RESTRICTIVE MEASURES RELATIVE TO EPILEPSY  
by Samuel Livingston

Published in Archives of Environmental Health v10 p508-16 (Mar 1965)

Surveys laws of various states regarding epileptics, including the issuance of driver's licenses. Suggests that many laws are unwarranted discriminatory, and not based on medical knowledge. While 11 states prohibit an epileptic from having a driver's license, in 33 he may get one if he can meet certain medical requirements. Author suggests that they often make very careful drivers.

Search terms: Epilepsy\*, Legal factors, Driver license standards, Legal rights, Driver physical fitness

HS-004 591 Fld. 3/9

MEDICAL FACTORS AND ROAD ACCIDENTS

HS-004 827 Fld. 3/9

ROLE OF PHYSICAL DISABILITIES  
by T. E. Banks

Published in Journal of the Louisiana State Medical Society v119 n9 p352-4 (Sep 1967)

### 3/9 Impaired Drivers (Cont.)

HS-004-827 (Cont.)

The handicapped driver is more alert to danger and exercises more caution, but some restrictions are necessary. Outlines conditions which make a driver unsafe or which require a restricted license in Louisiana.

Search terms: Louisiana\*, Handicapped drivers, Driver physical fitness, Driver license standards, Driver restrictions, Driver behavior

HS-004 972 Fld. 3/9

#### DRIVING RECORDS OF PERSONS WITH SELECTED CHRONIC DISEASES

by Alfred Crancer, Jr.,  
Dennis L. Quiring  
Washington. Dept. of  
Motor Vehicles, Olympia

Jul 1968 13p  
Report no. 015

Driving records of 266 diabetics and 100 cardiovascular patients were compared with 687,228 driving records of other drivers. Both diabetics and cardiovascular patients had higher violation rates, and diabetics had a higher accident rate, than the general population. The cardiovascular group had more serious violations, such as drunken and reckless driving. The diabetics had a comparable number of injury accidents, and the cardiovascular group fewer than the general population.

Search terms: Heart diseases\*, Diabetes mellitus\*, Driver physical fitness, Accident rates, Cardiovascular system, Traffic violations, Reckless driving, Drinking drivers, Driver intoxication, Injury factors, Driver records, Handicapped drivers, Washington\*

AVAILABILITY: From corporate author

HS-005 026 Fld. 3/6,3/9

#### LICENSING "FIT" DRIVERS by James L. Karns

Published in Traffic Digest and Review v16 n12 p3-6  
(Dec 1968) 7 refs

Significant elements in an increasing number of crashes include the physical condition and mental attitude of drivers. For this reason the licensing administrator looks to the medical profession for assistance in combatting highway crashes. Standards for medical advisory boards, doctor-patient relationships, the physician's role are discussed.

Search terms: Physicians\*, Drinking drivers, Driver licensing, Handicapped drivers, Mental illness, Diseases, Accident causes, Driver physical fitness, Driver attitudes

HS-005 069 Fld 3/4, 3/9

#### THE MENTALLY ILL AS MOTOR VEHICLE OPERATORS

by Alfred Crancer, Jr., Dennis L. Quiring

Washington. Dept. of Motor Vehicles,  
Olympia

Jun 1968 15p  
Report no. 013

Driving records of 271 persons hospitalized for mental illness were compared with 687,228 driving records of others. Three groups of patients studied were schizophrenics, psychoneurotics, and personality disorder patients. All three groups had higher violation rates. All but the schizophrenics had higher accident rates and a higher proportion of injury accidents.

Search terms: Driver records, Mental illness, Washington\*, Traffic violations, Accident rates, Driver behavior, Injury factors, Psychological factors

AVAILABILITY: Corporate author

HS-005 496 Fld. 3/9

#### THE TOTALLY DEAF DRIVER IN

#### CALIFORNIA. PART 2. A STATISTICAL EVALUATION OF THE ROLE OF DEAFNESS AS A FACTOR IN DRIVING PERFORMANCE

by R. S. Coppin; R. C. Peck

California. Dept. of Motor Vehicles,  
Sacramento

Dec 1964 38p  
Report no. 16

Prepared in cooperation with the California Div. of Drivers Licenses. Part 1 is HS-001 580.

Previous research indicated that deaf drivers had more accidents and violations on their records than other drivers, drove more miles per year, differed in occupational categories and age distributions. It could not be inferred that deafness caused poorer driving records because of other variables. This report matches deaf and non-deaf samples on all possible variables other than deafness to see if the deaf still had higher accident and violation rates. Deaf male drivers were found to have a higher accident rate, but deaf female drivers did not differ from other female drivers.

Search terms: Deafness\*; Hearing\*; Accident rates; Statistical analysis; California\*; Traffic violations; Vehicle miles\*; Age factor in driving; Sociological aspects; Driver records; Sex factor in accident; Sex factor in driving; Variables\*

AVAILABILITY: Corporate author

HS-005 581 Fld. 3/4; 3/9

#### THE PROBLEM OF THE OLDER DRIVER

by Verne Orr

Published in *Highway User* p18-9  
(Dec 1967)

The proportion of older drivers is rising in California, which now has 1,250,000 drivers over 60. The state's driver license renewal procedures for older drivers are discussed. The principal handicaps of older drivers are diminishing vision, hearing, and reaction time, and poorer perception of complex traffic situations.

Search terms: Aged drivers\*; California\*; Vision\*; Hearing\*;

### 3/9 Impaired Drivers (Cont.)

HS-005-581 (Cont.)

Reaction time; Driver physical fitness; Driver characteristics; Driver license renewal

HS-005 760 Fld. 3/9

#### AUTOMOBILE DRIVERS AND CEREBROVASCULAR INSUFFICIENCY

by William J. Foley; Michael E. McGinn; S. Martin Lindenauer

Published in *Journal of the American Medical Association* v207 n4 p749-51 (27 Jan 1969) 8 refs

Cerebrovascular insufficiency deserves more attention as a cause of transient driver disability. Physicians have an important role in evaluating driver limitations and should advise patients with cerebrovascular insufficiency not to drive. The condition can seriously impair driving ability without warning. Two case histories are given; both suffered blackouts while driving and one had an accident.

Search terms: Driver physical fitness; Heart diseases\*; Accident causes; Handicapped drivers; Case reports\*; Physicians\*; Cardiovascular system

HS-005 648 Fld. 3/9

#### ACCIDENT AND VIOLATION RATES OF WASHINGTON'S MEDICALLY RESTRICTED DRIVERS

by Alfred Crancer, Jr.; Lucille McMurray

Published in *Police* v13 n3 p90-4 (Jan-Feb 1969)

The accident and violation rates of 39,242 medically restricted drivers were compared with the rates of all 1.6 million licensed drivers in the state. Accident Rates were higher among some groups of restricted drivers such as those with diabetes, epilepsy, heart disease, and physical handicaps. Accident Rates were slightly lower among those with vision deterioration. Violation rates were higher among those with diabetes, epilepsy, and physical handi-

caps, lower among those with heart disease. Statistics on accidents and violations are given.

Search terms: Accident data; Traffic violations; Accident rates; Washington\*; Handicapped drivers; Driver physical fitness; Vision disorders\*; Diabetes mellitus\*; Epilepsy\*; Heart diseases\*; Driver restrictions; Driver license standards

HS-005 808 Fld. 3/9; 1/3; 3/1

#### MEDICAL IMPAIRMENT AND HIGHWAY CRASHES

by Julian A. Waller

Published in *Journal of the American Medical Association* v208 n12 p2293-6 (23 Jun 1969) 22 refs.

Presented to American Medical Association Automotive Safety Symposium, Washington, D. C., Sept. 13, 1968.

Impairment to drivers or pedestrians from chronic medical problems may be a contributing factor in 15 to 25% of crashes. In addition, alcoholism is a factor in a third of fatal crashes. Drivers with medical problems should be reported to licensing authorities, but no more than a quarter of these drivers should have their licenses revoked. For the remainder, driving and walking tasks should be simplified. Energy absorption capacity of vehicles and highways should be improved and emergency health services upgraded.

Search terms: Alcoholism; Drinking drivers; Driver intoxication; Energy absorption; Driver physical fitness; Pedestrian characteristics; Driver license revocation; Driving tasks; Walking\*; Accident factors; Handicapped drivers; Medical conditions; Fatalities; Emergency medical services; Physicians.

HS-005 826 Fld. 1/3; 3/4; 3/9

#### AGE AND AUTOMOTIVE ACCIDENTS

by Donald P. Kent; Geraldine B. Novotny

Published in *Geriatrics* v16 n6 p271-7 (Jun 1961) 15 refs

Data by age groups show that the

accident index for drivers between 60 and 69 is well below the national average, while that for those above 70 equals the national average. Drivers below the age of 20 have the poorest record, and drivers up to 30 have a poorer record than those over 75 according to National Safety Council figures. A similar pattern is reported by Connecticut data. Fatal accidents per miles driven and age of driver are discussed briefly. Periodic examination and other measures designed to decrease accidents are appropriate for all age groups, although attention in this regard has been focused on the elderly driver.

Search terms: Aged drivers\*; Age factor in accidents; Connecticut\*; Driver miles\*; Fatalities; Accident data; Driver physical fitness; Vision disorders\*; Reaction time; Drinking drivers; Blood alcohol levels\*; Hearing\*; Handicapped drivers; Medical conditions; Medical examination; Psychological tests; Defective vehicles; Highway safety; Accident causes; Accident prevention; Accident rates

HS-005 862 Fld. 1/2; 3/9

#### NATURAL DEATH AT THE WHEEL

by Irma West; George L. Nielsen; Allan E. Gilmore; John R. Ryan

Published in *Police* v13 v4 p89-95 (Mar-Apr 1969) 25 refs

Two-year study of 1,026 California drivers who died within 15 minutes of single-vehicle accidents shows that 15% died of natural causes, chiefly coronary artery disease. Most were men averaging 60 years of age. Post-mortems are recommended to detect this cause. Twelve case reports are given.

Search terms: Single vehicle accidents; Fatalities from natural causes\*; Heart diseases\*; Age factor in accidents; Sex factor in accidents; Autopsies\*; Case reports\*; Aged drivers\*; Driver physical fitness

HS-005 869 Fld. 3/4; 3/9

#### THE SLEEPY DRIVER

by Robert E. Yoss; David D. Daly

Published in *Police* v13 n4 p6-10

### 3/9 Impaired Drivers (Cont.)

HS-005-869 (Cont.)

(Mar-Apr 1969) 9 refs

The problem of narcolepsy is examined in relation to driving and other activities. Persons who fall asleep or become drowsy whenever they are driving cannot be safe drivers. Narcolepsy can be successfully treated and most of these persons can be alert drivers. Some cases are described. The normal sleep pattern and its variations are outlined.

Search terms: Sleep\*; Narcolepsy\*; Driving tasks; Case reports\*; Driver physical fitness

HS-005 874 Fld. 3/9

#### THE HANDICAPPED AS AUTOMOBILE DRIVERS

by Frank D. Altobelli

Published in *Rehabilitation Record* v5 n6 p36-38 (Nov-Dec 1964)

Persons engaged in rehabilitation work or driver licensing should balance the twin requirements that only competently trained and physical able drivers are licensed and that the needs of handicapped persons who have compensated for their disabilities are served. The driving abilities of epileptics, amputees, older persons, and others with handicaps are discussed. It is recommended that license should be granted to those who can demonstrate their driving ability.

Search terms: Driver license standards; Handicapped drivers; Driver licensing; Driver physical fitness; Epilepsy\*; Aged drivers\*; Driver skills; Amputees\*

HS-005 875 Fld. 3/9

#### MEDICAL HANDICAPS TO DRIVING: THE PHYSICIAN'S DILEMMA IN EVALUATION

by Julian A. Waller; Ronald V. Thunen

Published in *California Medicine* v98 n5 p275-8 (May 1963)

Physicians should evaluate physical and mental fitness to drive on five factors: extent and nature of driving exposure; relation of organ system

involved to medical requirements of the driving task; duration of the condition and nature of adaptability; predicted speed of onset of medical crisis; and an evaluation of the patient and his environment as a totality. Both the welfare of the patient and the welfare of the community must be considered. A medical society traffic safety committee can be helpful both to physicians and to licensing authorities.

Search terms: Handicapped drivers; Driver license standards; Driver physical fitness; Driving tasks; Driver licensing; Physicians\*; Medical advisory boards\*; Medical conditions

HS-006 033 3/9

#### THE IMPAIRED DRIVER: A CRITICAL REVIEW OF THE FACTS

by Irma West

Published in *California Medicine* v98 n5 p271-4 (May 1963) 22 refs

While it is assumed that physical impairments of drivers are important in causing accidents, little evidence has been collected on this subject. The health status of California drivers is examined and estimates are made of the incidence of physical, social, and mental conditions that might contribute to auto accidents. Among the conditions considered are physical disabilities, alcoholism, mental illness, heart disease, diabetes, epilepsy, drug addiction. Ex-convicts are also considered. Most documentation is available on drunk drivers and young male drivers as high-accident groups.

Search terms: Driver physical fitness; Accident causes; Handicapped drivers; California\*; Mental illness; Sociological aspects; Alcoholism; Driver intoxication; Drinking drivers; Heart diseases\*; Diabetes mellitus\*; Epilepsy\*; Drug addiction; Sex factor in accidents; Age factor in accidents; Young adult drivers\*

HS-006 046 Fld. 2/0; 3/9; 3/6

#### PRE-CRASH FACTORS IN TRAFFIC SAFETY: 12th ANNUAL SYMPOSIUM

by George G. Snively, ed.

American Assoc. for Automotive Medicine, Salem, N.J.

17-18 Oct 1968. 311p

Highway safety should be of concern to medical schools. Seventeen papers explore many aspects of the highway safety problem from the standpoint of public health and preventive medicine.

Search terms: Highway safety; Medical sciences; Pre-crash phase; Driver behavior; Driver education; Conferences\*; Human factors engineering; Safety standards; Driver licensing; Crashworthiness\*; Emergency medical services; Traffic safety; Public health\*; Accident factors

AVAILABILITY: Corporate author (Includes HS-006 047 to HS-006 063)

HS-006 058 Fld. 2/0; 3/6; 3/9

#### PREVENTIVE MEDICINE: CALIFORNIA'S DRIVER IMPROVEMENT PROGRAM

by Keith Ball

California. Dept. of Motor Vehicles Sacramento

6 refs

Driver licensing practices of California are discussed in relation to drivers with physical or mental disabilities. The importance of the medical profession in evaluating such drivers is emphasized. A number of case histories are given to illustrate the types of driver impairment which are grounds for drive license denial or suspension—epilepsy, losses of consciousness, diabetes, heart disease, narcolepsy, and similar conditions.

Search terms: Case reports\*; Driver licensing; Handicapped drivers; Driver physical fitness; Mental illness; California\*; Epilepsy\*; Diabetes mellitus\*; Heart diseases\*; Narcolepsy\*; Driver license denial; Driver license suspension; Physicians\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p203-22 (HS-006 046)

### 3/9 Impaired Drivers (Cont.)

HS-006 192 Fld. 3/6; 3/9

#### MEDICAL ASPECTS OF DRIVER LICENSING. MEDICAL DEFICIENCIES—DETECTION, EVALUATION AND REPORTING

by Harold M. Erickson; Julian A. Waller

Published in *Traffic Safety* v65 n1 p22-5, 32-3 (Jan 1965)

The need for a selective procedure in screening prospective drivers with medical conditions is discussed. Aid of physicians in determining criteria for evaluating driver physical fitness is recommended. Collection of specific data to relate medical deficiencies to driving is necessary to establish criteria. Programs of California and Oregon relating to licensing of impaired drivers are detailed.

Search terms: Driver licensing; Handicapped drivers; Driver physical fitness; Oregon\*; California\*; Accident risks; Medical conditions; Physicians\*; Mental illness; Accident factors; Heart diseases\*; Medical advisory boards\*; Data acquisition; Epilepsy\*; Vision\*; Diabetes mellitus\*

### 3/9 Impaired Drivers

HS-006 193 Fld. 3/9; 1/3

#### HIGHWAY CRASH AND CITATION PATTERNS AND CHRONIC MEDICAL CONDITIONS

by Julian A. Waller; James T. Goo

Published in *Journal of Safety Research* v1 n1 p13-27 (Mar 1969) 9 refs

Types of crashes and citations were compared for 1,701 drivers with chronic medical conditions and 921 drivers not known to have medical conditions. Drivers without medical conditions committed no errors in about half of their crashes whereas those with alcoholism committed no errors in 13% of their crashes. Drivers with other medical conditions were

Search terms: Medical conditions; Traffic violations; Accident types; Age factor in accidents; Accident studies; Accident data; Alcoholism; Mental illness; Drug addiction; California\*; Driver physical fitness; Heart diseases\*; Epilepsy\*; Diabetes mellitus\*; Accident responsibility; Aged drivers\*; Young adult drivers\*

HS-006 194 Fld. 3/9

#### THE DOCTOR LOOKS AT THE OLDER DRIVER

by Alfred H. Lawton

Published in *Traffic Safety* v64 n10 p12-5, 40, 42 (Oct 1964)

Much research is necessary to determine at what point a person has functionally reached an age when he can no longer drive safely. To determine capabilities of drivers, tests must be devised, with the aid of physicians, taking into consideration such physiologic, pathologic, and behavioral factors as age, fatigue, use of drugs, emotional factors, chronic diseases, vision and hearing impairments, reflexes, memory span, and decline of bodily functions.

Search terms: Aged drivers\*; Age factor in driving; Driver physical fitness; Medical factors; Driver performance; Driver licensing; Handicapped drivers; Vision\*; Hearing\*; Driver license standards; Fatigue (biology); Emotions\*; Driving tasks

HS-006 303 Fld. 3/9; 3/1

#### MEDICAL IMPAIRMENT AND HIGHWAY CRASHES

by Julian A. Waller

Published in *Journal of the American Medical Association* v208 n12 p2293-6 (23 Jun 1969) 22 refs

Presented to American Medical Association Automotive Safety Symposium, Washington, D.C., Sept. 13, 1968.

Impairment to drivers or pedestrians from chronic medical problems, is believed to be a contributing factor in 15% to 25% of highway crashes. In addition, alcoholism is a factor in a third of fatal crashes. Most drivers

Search terms: Drugs; Accident rates; Pedestrian characteristics; Accident causes; Alcoholism; Driver licensing; Age factor in accidents; Medical conditions; Physicians; Drinking drivers; Driver intoxication; Driver license revocation; Driver physical fitness

HS-006 520 Fld. 3/12; 3/9; 3/6

#### RELATIONSHIP OF OCULAR PATHOLOGY AND DRIVING IMPAIRMENT

by Arthur H. Keeney

Published in *Transactions of the Pennsylvania Academy of Ophthalmology and Otolaryngology* v21 p22-7 (Spr 1968)

Presented at annual meeting of Pennsylvania Academy of Ophthalmology and Otolaryngology, May 1967.

Of 1,153 Pennsylvania drivers required to take driving tests or medical exams, 33% proved to have need for corrective measures, some involving their vision. Ground rules for a medical review board are: whether the illness is short-term; individualized examinations; giving the handicapped the benefit of the doubt. Twelve basic problem areas involving visual defects and problems are listed.

Search terms: Medical advisory boards; Pennsylvania; Vision tests; Vision disorders; Handicapped drivers; Driver physical fitness; Medical examination; Driver tests

### 3/11 PEDESTRIANS

HS-004 309

#### "INJURIES"--THEIR ROLE IN RECONSTRUCTION OF TRAFFIC ACCIDENTS

Jagat Bandhu Mukherjee  
1 Sep 1967 5 p.

AVAILABILITY: Published in Journal of the Indian Medical Association v49 n5 p224-8 (1 Sep 1967)

Study of the kinds of injuries sustained by pedestrians and how to reconstruct accidents by studying injury patterns. Injuries are grouped into those of primary impact, secondary impact, and "running down" or crush. Pathology of injuries may be better court evidence than witnesses. Study describes conditions in India, where pedestrians are considered not to be traffic conscious.

HS-004 489 Fld. 3/11

#### MOVEMENT OF PEDESTRIANS ON FOOTWAYS IN SHOPPING STREETS

by S. J. Older

Published in Traffic Engineering & Control v10 n4 p1603 (Aug 1968)

Study of pedestrian speed, flow, and density, mostly in a shopping crowd. If sidewalks are too crowded they overflow onto streets.

Search terms: Pedestrian behavior, Shopping facilities, Traffic congestion, Speed patterns, Traffic density, Traffic flow, Sidewalks

HS-004 569 Fld. 1/3,3/11,1/

#### THE PATHOLOGY OF PEDESTRIAN AUTOMOTIVE ACCIDENT VICTIMS

by James R. McCarroll,  
Paul W. Braunstein, Sidney B. Weinberg, Michael G. Seremetis, William Cooper

Grant-PHS-AC-00019

Published in Journal of Trauma v5 n3 p421-6 (1965)

Principal pathologic lesions sustained by 200 pedestrians killed by autos in New York City in an 18-month period are presented. Most died as a result of blunt trauma with relatively little surface evidence of serious internal injury. Certain superficial lesions are described which were found regularly to accompany specific internal lesions. Head injuries were leading cause of death. Neck, spine, and abdomen injuries also caused many deaths.

Search terms: Pedestrian accidents, Internal injuries, Fatalities, Abdomen injuries, Neck injuries, Spinal injuries, Head injuries

HS-004 766 Fld. 3/11,2/4

#### THE CARE AND HANDLING OF PEDESTRIANS

by Arthur D. Bird

Published in Public Safety Systems v33 n4 p10-2 (Jul-Aug 1968)

Pedestrians are essential to central business districts, but most of the planning concentrates on vehicular access. It is more difficult to provide safe, comfortable, and rapid progress for pedestrians and prevent conflicts between vehicles and pedestrians. Suggests a coordinated traffic signal system with phasing to favor pedestrian movements where possible, signalized mid-block crosswalks, one way streets and restricted turning, and wider sidewalks. Other concepts such as moving sidewalks and pedestrian overpasses and underpasses are also discussed.

Search terms: Central business districts, Urban planning, Pedestrian safety, Traffic flow patterns,

Traffic signals, Crosswalks, One way streets, Turning (direction change), Sidewalks, Overpasses\*, Underpasses\*

HS-004 767 Fld. 3/11

#### THE ELDERLY PEDESTRIAN: RESPONSE TO AN ENFORCEMENT CAMPAIGN

by Earl L. Wiener

Published in Traffic Safety Research Review v12 n4 p100-10 (Dec 1968)  
34 refs Grant PHS-AC-00237

Jaywalking behavior was examined before, during, and after a campaign by photographing and analyzing street crossing behavior at two locations, and some pedestrians and taxi drivers, were interviewed. There was an improvement during the campaign, but four months later the percentage of legal crossings was the same as before the campaign unless a policeman was on the corner. Interviews revealed that elderly pedestrians are often confused about traffic control and base their judgments on the movement of autos rather than on traffic signals. Pedestrians had a favorable attitude toward enforcement.

Search terms: Pedestrian behavior, Interviews\*, Law enforcement\*, Police, Traffic control. Safety campaigns, Jaywalking\*, Aged\*, Human factors engineering

HS-004 769 Fld. 3/11

#### SAFETY TOWN

by J. R. Lindsey

Published in American County Government v33 n12 p24-6 (Dec 1968)

Describes a facility located in a shopping center in Henrico County, Virginia, to teach pedestrian safety to children in the 4-8 age group. Teaching is by police officers.

### 3/11 Pedestrians (Cont.)

HS-004-769 (Cont.)

Five one-hour lessons cover signs, signals, and markings; what to do when lost; pedestrian, bicycling, playing, school bus, and railroad safety.

Search terms: Pedestrian safety, Children, Pedestrian training, Signs (displays), Traffic markings, Traffic signals, School buses, Bicycles, Railroads, Virginia\*, Shopping centers, Police

HS-004 770 Fld. 3/11,1/3

A STUDY OF PEDESTRIAN RISK IN CROSSING BUSY ROADS IN FOUR TOWNS by G. D. Jacobs, D. G. Wilson Road Research Lab., Crowthorne, Berks. (England)

1967 31p  
Report no. RRL-LR-106

In connection with accident distribution, comparisons were made of pedestrians crossing a road and the number of casualties. A greater percentage used the crosswalk when it was zebra marked than light controlled. There was a marked relationship to age and injury risk.

Search terms: Zebra crossings\*, Statistical analysis, One way streets, Accident locations, Pedestrian safety, Crosswalks, Injury factors, Age factor in accidents, Urban highways, Sex factors, Safety zones, Pedestrian behavior, Traffic density, Accident risks, Rural highways

AVAILABILITY: From corporate author

HS-004 828 Fld. 3/11

THE EFFECT OF VEHICLE LIGHTING ON PEDESTRIAN MOVEMENT IN WELL-LIGHTED STREETS by G. D. Jacobs Road Research Lab., Crowthorne, Berks. (England)  
1968 18p  
Report no. RRL-LR-214

Vehicle lighting (sidelights or dipped headlights) had no significant effect on how far ahead of the car or how quickly pedestrians crossed a lighted street, or on the proportion (80%) of those who actually crossed in front of the car.

Search terms: Dimmed headlights\*, Headlights, Sidelights\*, Highway lighting, Great Britain\*, Pedestrian-vehicle interface

AVAILABILITY: From corporate author

HS-004 882 Fld. 3/11,4/2

THE APPROACH IS PEDESTRIAN by Phyllis Dee Lovoca

Published in Highway User p20-2 (Aug 1967)

Describes the Pedestrian Safety Inventory Program of the American Automobile Association in teaching pedestrian safety, especially to older persons and children. Awards are given to communities which have pedestrian safety programs and low accident rates.

Search terms: Pedestrian safety, Pedestrian Safety Inventory Program\*, Children, Aged\*, Accident rates, Safety programs, American Automobile Association\*, Community support

HS-005 123 Fld. 3/11

SIDEWALK NEEDS IN RESIDENTIAL AREAS

by Paul C. Box

Published in Public Safety Systems v34 n2 p15-8 (Mar-Apr 1969)

Criticizes the lack of sidewalks especially in new subdivisions and points

out the dangers to pedestrians, particularly children. Outlines design standards for sidewalks in subdivisions.

Search terms: Pedestrian safety, Children, Suburban areas, Sidewalks, Accident risks, Design Standards

HS-005 380 Fld. 1/2; 3/11

A STUDY OF PEDESTRIAN FATALITIES IN WAYNE COUNTY, MICHIGAN

by Donald F. Huelke; Rollin A. Davis  
Michigan Univ., Ann Arbor. Highway Safety Research Inst.

1969 59p 15 refs  
Report no. HSRI-Bio-9

Pedestrian fatalities for a two year period are charted according to age, sex, time, alcohol involvement, pedestrian actions, road conditions, weather and lighting conditions, and injury locations. An appendix contains fifty-eight brief case reports indicating each accident situation, vehicle type, police estimated speed, and the fatal injuries of pedestrians.

Search terms: Michigan\*; Pedestrian behavior; Pedestrian accidents; Accident causes; Fatalities; Injuries; Injury severity; Age factor in accidents; Sex factor in accidents; Time factors\*; Blood alcohol levels\*; Road conditions; Case reports\*; Accident analysis; Accident rates; Weather; Night driving; Speed; Environmental factors; Accident data

AVAILABILITY: Corporate author

HS-005 557 Fld. 3/11

THE TALKING TRAFFIC LIGHT

by Michael Thomas Loftus

Published in FBI Law Enforcement Bulletin v36 n1 p12-6 (Jan 1967)

The Omaha Police Department's Pre-school Child Traffic Training Program is described. Its purpose is to teach children entering school for the first time the skills and attitudes needed to become good pedestrians and how to conduct themselves through traffic to and from school. Exercises used by the police are included.

### 3/11 Pedestrians (Cont.)

HS-005-557 (Cont.)

Search terms: Children; Police traffic services; School traffic safety; Pedestrian training; Pedestrian safety

HS-005 586 Fld. 3/11

#### A GENERATION OF EFFORT BENEFITS PEDESTRIANS

Anonymous

Published in *Public Works* v99 n12  
p67-9 (Dec 1968)

Outlines the history of pedestrian safety programs during the last thirty years, especially the Pedestrian Safety Inventory Program of the AAA. Pedestrian fatalities have dropped 40% during this period despite an increase of 237% in motor vehicle registrations. A pedestrian safety program should include: pedestrian control ordinance with selective enforcement; improved traffic engineering services for pedestrians; better school site planning; more play grounds; better crosswalks; better traffic signs; and safety education in schools, since up to 60% of pedestrian accidents happen to children.

Search terms: Pedestrian Safety Inventory Program\*; Pedestrian safety; Pedestrian accidents; Fatalities; Children; Crosswalks; Traffic engineering; Traffic signs; Safety programs; Accident rates; Legislation; Law enforcement\*; School traffic safety; School crossing protection

HS-005 740 Fld. 2/5; 3/11

#### PEDESTRIANS SHOULD BE SEEN

Anonymous

Published in *Public Safety System*  
v34 n2 p19 (Mar-Apr 1969)

Pedestrians should be seen and not hurt. For maximum benefit and effectiveness, general guidelines are presented for installation of a cross-walk lighting system.

Search terms: Crosswalks; Crossing illumination; Lighting design;

Pedestrian safety; Accident prevention; Street lighting

HS-820 048 Fld. 3/11

#### HIGHWAY SAFETY PROGRAM MANUAL. VOLUME 14. PEDES- TRIAN SAFETY

National Highway Safety Bureau,  
Washington, D.C.

Apr 1969 80p 16 refs

One of 17 volumes, two of which (vols. 12 and 13) are as yet unissued (see HS-820 036 to HS-820 050).

The complete manual supplements the Highway Safety Program Standards and presents additional information to assist State and local agencies to implement their highway safety programs. This volume is concerned with the Pedestrian Safety Program whose purpose is to reduce the incidence of vehicle-pedestrian collisions and the severity of the resulting injuries and to emphasize and stimulate recognition of pedestrian safety as an integral, constant, and important element of community planning.

Search terms: Highway safety; Safety programs; State government; Local government\*; Pedestrian safety; Pedestrian-vehicle interface; Pedestrian Safety Program Inventory\*; Pedestrian training; School traffic safety; Pedestrian malls

AVAILABILITY: Federal Highway Administration, Washington, D.C. 20591, Attn: Records Management Branch. \$3.95

HS-006 034 Fld. 3/11; 2/9; 4/1

#### PEDESTRIAN RESPONSE TO RED LIGHTS

National Committee on Uniform Traffic Laws and Ordinances,  
Washington, D.C.

Published in *Traffic Laws Com-  
mentary* n69-3 p1-13 (3 Sep 1969)

Contract FH-11-6869

The pro's and con's of allowing pedestrians to start crossing when facing a red light are discussed. There is a conflict on this between the Uniform Vehicle Code and the

Manual on Uniform Traffic Control Devices for Streets and Highways. Variations in state laws are discussed.

Search terms: Pedestrian behavior; Pedestrian safety; Uniform Vehicle Code\*; Manual on Uniform Traffic Control Devices for Streets and Highways\*; State laws; Law uniformity; Traffic signals; Traffic control; Signal color; Intersections

HS-006 123 Fld. 3/11; 1/3

#### THE NEW IMAGE OF THE OLDER PEDESTRIAN

by Sam Yaksich, Jr.

Published in *Traffic Safety* v65 n2  
p22-4, 35-6 (Feb 1965)

Physical limitations due to age are a major factor in traffic accidents involving older pedestrians. Detailed studies of injuries and fatalities of this age group indicate that most accidents occur at intersections with vehicles traveling at low speeds; nighttime and dusk are particularly hazardous; males are more vulnerable; and that there is very little evidence of alcohol and suicide as being contributing factors. Suggestions are made for improving the safety of older pedestrians.

Search terms: Pedestrian accidents; Pedestrian behavior; Pedestrian safety; Aged\*; Injuries; Fatalities; Community support; Intersections; Sex factor in accidents; Vision\*; Reaction time; Age factor in accidents; Suicide\*; Traffic safety programs; Pedestrian intoxication; Hazards

HS-006 235 Fld. 3/11; 1/3

#### SOME ASPECTS OF PEDESTRIAN SAFETY

by R. J. Smeed

Published in *Journal of Transport Economics and Policy* v2 n3 p255-79  
(Sep 1968) 15 refs

From a lecture given to the International Federation of Pedestrians,  
19 Apr 1968.

The trends in pedestrian accidents are reported. Factors affecting these trends, such as age of the pedestrian, weather, hour of the day, and type of road, are presented. Differences in the fatality rates of different

### 3/11 Pedestrians (Cont.)

HS-006-235 (Cont.)

countries are pointed out. Suggestions are made for reducing the number of accidents.

Search terms: Benefit cost analysis; Pedestrian safety; Pedestrian behavior; International aspects; Accident prevention; Accident rates; Fatalities; Night driving; Visibility; Police traffic services; Pedestrian accidents; Accident data; Age factor in accidents; Environmental factors; Weather; Time factors; Driver behavior

HS-006 304 Fld. 3/11

### IMPROVING PEDESTRIAN SAFETY

by J. T. Duff

Published in *Traffic Engineering and Control* v10 n1 p35-6 (May 1968)

Pedestrian safety in Great Britain is discussed. 90% of serious pedestrian accidents occur in urban areas. Pedestrian safety measures are discussed: zebra crossings, signalled crossings, pedestrian subways and footbridges, pedestrian precincts or malls, and walkways.

Search terms: Pedestrian safety; Pedestrian accidents; Zebra crossings; Crossings; Intersections; Pedestrian malls; Great Britain; Sidewalks; Urban accidents; Traffic signals; Overpasses

HS-006 305 Fld. 3/11; 2/9

### PEDESTRIAN FLOW CHARACTERISTICS

by Francis P. D. Navin; R. J. Wheeler

Published in *Traffic Engineering* v19 n7 p30-3, 36 (Jun 1969) 7 refs

The effects of two-way pedestrian flow on the capacity of a sidewalk were measured and mathematically modeled. In this study, time lapse color photographs of the test section were taken from elevated fixed positions. This will aid in the prediction of routes and peak flows providing for economical pedestrian facility construction. Scope of the study included sidewalk proportioning, location and width requirements for a lane, walking speeds for men and women, and speed-concentration relationship.

Search terms: Mathematical models; Pedestrian characteristics; Traffic flow patterns; Traffic capacity; Sidewalks; Photography; Speed patterns

HS-006 306 Fld. 3/12; 3/11; 3/1

### THE ABILITY TO SEE A PEDESTRIAN AT NIGHT: THE EFFECTS OF CLOTHING, REFLECTORIZATION AND DRIVER INTOXICATION

by Richard D. Hazlett; Merrill J. Allen

Published in *Archives of American Academy of Optometry* v445 n4

p246-58 (Apr 1968) 18 refs

In the United States, pedestrian deaths account for nearly 20% of all traffic fatalities. At low levels of illumination sensitivity to contrast decreases as an individual's blood alcohol level increases. Dummies covered with white fabric were safely visible at 50 mph; only reflectorized dummies were safely visible above that speed. At blood alcohol levels greater than 0.04% a significant decrease in mean visibility distance occurred for each of the simulated pedestrian conditions.

Search terms: Pedestrian safety; Drinking drivers; Visibility; Blood alcohol levels; Night driving; Dummies; Fatalities; Driver intoxication; Color perception; Pedestrian accidents; Visual perception; Laboratory tests; Road tests

HS-006 357 Fld. 3/11; 1/4

### ACCIDENT RISK TO PEDESTRIANS ON AND WITHIN 50 YARDS OF ZEBRA CROSSINGS

by A. M. Maçkic

Published in *Traffic Engineering 2nd Control* v4 n8 p448-50 (Dec 1962)

Numbers of accidents to pedestrians at 21 zebra crossing sites in London during 1961 were obtained so that a risk ratio could be calculated. The risk of injury to a pedestrian who uses a crossing is still significantly less than the risk he runs within 150 feet of it. Furthermore, the risk on the crossing appears to have dropped from about 50 percent to about 28 per cent of the risk off the crossing but within 150 feet.

Search terms: Accident rates; Zebra crossings; Pedestrian accidents; Accident risks; Mathematical analysis; London; Pedestrian safety

HS-800 169 Fld. 3/11; 4/1; 1/3

### PEDESTRIAN REGULATION ENFORCEMENT AND THE INCIDENCE OF PEDESTRIAN ACCIDENTS

by Sidney Singer

Dunlap and Associates, Inc., Darien, Conn.

Aug 1969 91p 71 refs  
Contract FH-11-6968; PB-187 519  
Report no. D/A-SSD-69-726

Pedestrian protection ordinances, their enforcement, and the effectiveness of enforcement in reducing pedestrian accidents were investigated. A literature search revealed a large body of popular material but a lack of scientifically valid information. Analysis of existing data showed no statistically significant relationship between the degree of enforcement activity and pedestrian casualties in urban areas. The data base however, was considered inadequate to make a valid study. The field experiment, conducted in Fort Worth, Sacramento, and Seattle, was divided into three phases: before, during, and after the introduction of a two-week period of increased enforcement. No conclusive results were produced. It was observed that in most states, pedestrian-related regulations conformed substantially with the Uniform Vehicle Code. The report recommends development of better quantitative measures than issuance of citations to indicate the effectiveness of pedestrian regulation enforcement, and consistent nation-wide collection of data on this subject.

Search terms: Pedestrian accidents; Pedestrian behavior; Pedestrian safety; Law enforcement; Regulations; Statistical analysis; Fort Worth; Sacramento; Seattle; State laws; Uniform Vehicle Code; Urban areas; Traffic signals; Reviews; Violations; Safety campaigns; Accident rates; Variance analysis; Intersections; Jaywalking

AVAILABILITY: CFSTI as PB-187 519

### 3/11 Pedestrians (Cont.)

HS-006 449 Fld. 2/9; 3/11

#### A COMPARISON OF X-WAY AND OTHER PEDESTRIAN CROSSINGS

by G. D. Jacobs; S. J. Older; D. G. Wilson

England. Road Research Lab., Crowthorne, Berks.

1968 65p 6 refs

Report no. RRL-LR-145; PB-179 702

X-way crossings, signal controlled pedestrian crossings which show in sequence a red, flashing amber, white cross or steady amber signal to vehicles, and a red, green, or flashing green symbolic man to pedestrians, were installed experimentally at certain sites in Great Britain. Road user behavior at these crossings has been compared with that at zebra and normal signal controlled crossings. The use of X-way crossings by pedestrians was found to be similar in most respects to that of the other types; however, drivers appeared to be less observant. Estimates of pedestrian and vehicle delays under various conditions of vehicle and pedestrian flow are made for X-ways and compared to the other types.

Search terms: Pedestrian behavior; Pedestrian safety; Zebra crossings; X-way crossings; Driver behavior; Traffic signals; Signal color; Traffic data analysis; Time factors; Traffic flow

AVAILABILITY: CFSTI as PB-179 702

HS-006 468 Fld. 3/11; 1/3

#### PEDESTRIAN ACCIDENTS

by F. Garwood; R. L. Moore

Published in *Traffic Engineering and Control* v4 n5 p274-6, 279 (Sep 1962)

Presented at the 3rd Annual Scientific and General Meeting of the British Academy of Forensic Sciences, July 27-29, 1962.

Various methods deal with the problem of pedestrian accidents. This paper describes some of the investigations designed to assist policy direction concerning uncontrolled pedestrian crossings, advantages of zebra crossings; increased pedestrian subways and bridges.

Search terms: Pedestrian accidents; Pedestrian safety; Zebra crossings; Great Britain; Cross walks; Traffic signals; Underpasses; Overpasses; Traffic actuated signals

HS-006 663 Fld. 1/3; 3/11

#### PEDESTRIAN ACCIDENTS: WHO, WHEN, WHERE, HOW

Idaho. Dept. of Highways, Boise  
May 1964 14p

Analysis of reports for 504 pedestrian accidents in Idaho provides data on pedestrian problems and assists in planning pedestrian safety improvements. It was concluded that most pedestrian accidents occurred in daylight during good weather; many involved young adult drivers; most victims were children, but the accidents did not take place close to schools; traffic signals did not provide adequate protection.

Search terms: Idaho; Pedestrian accidents; Accident causes; Accident factors; Accident data; Pedestrian safety; Accident location; Children; Young adult drivers; Traffic signals; Environmental factors; Age factor in accidents

AVAILABILITY: Corporate author

### 3/12 Vision (Cont.)

HS-004-512 (Cont.)

1967

To understand the fundamental processes of vision, practical explanations for the highway and automobile designer and the safety engineer are offered for the following: (1) the Rushton automatic control box and the Fuortes-Hodgkin electronic analog box for determination of retinal illumination and light saturation; (2) the Pulfrich stereophenomenon to explain perception lag between the two eyes.

Search terms: Visual perception, Vision\*, Mathematical models, Eye (anatomy), Retina\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p89-92 (HS-004 500)

HS-004 513 Fld. 1/3,3/12

VISIBILITY PROBLEMS IN NIGHT DRIVING: THE ROLE OF SUBJECTIVE BRIGHTNESS AND CONTRAST  
by W. D. Wright

1967

Visual situation & reduction of accidents in night driving are discussed. A massive program of education, training, testing, and publicity is needed to make the driver aware of unfit road conditions. The highway engineer and the car designer can make driving safer, but much of the responsibility is with the driver himself.

Search terms: Night driving, Brightness, Glare reduction, Accident reduction, Road surfaces, Vision\*, Color, Visual perception

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p93-9 (HS-004 500)

HS-004 514 Fld. 1/3,3/12

THE REDUCTION OF DISABILITY AND DISCOMFORT GLARE IN TRAFFIC  
by Herbert A. W. Schober

1967 30 refs.

The present status of its related problems (stray light, signal-to-noise ratio, antiglare goggles, luminance requirements, methods of measurement) are reviewed. Effective prevention of glare must combine ophthalmological and pathological findings in the eye of the driver, reduction of glare sources, and an increase of luminance level on the road.

Search terms: Glare reduction, Traffic, Mathematical models, Reduced visibility, Lighting design

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p100-12 (HS-004 500)

HS-004 515 Fld. 1/3,3/12,2/9

IMPROVING VISIBILITY OF THE HIGHWAY SIGNS AS A MEANS OF ACCIDENT PREVENTION  
by Theodore W. Forbes

1967

The importance of visibility for safe driving under very bad conditions is generally recognized. Under ordinary conditions its importance, though not so well recognized, may be even greater because visibility limitations may present surprises to the driver. Most visibility deficiencies have been designed out of freeways. Methods of improving visibility on secondary roads and city streets are suggested.

Search terms: Visibility, Highway signs, Accident prevention, Streets

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p113-7 (HS-004 500)

HS-004 516 Fld. 1/3,3/12

THE VISUAL ENVIRONMENT IN THE MODERN AUTOMOBILE  
by Merrill J. Allen

1967

Evaluates the role vision plays in safe driving by examining factors affecting the driving task. Considers the windshield a source of visual noise and degradation which can be reduced or eliminated. Concludes the windshields offer excellent particle and crash injury protection, but good optical performance is lacking.

Search terms: Visual perception, Windshields, Automobile design, Vision, Driving tasks, Tinted windshields\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p118-21 (HS-004 500)

HS-004 517 Fld. 1/3,3/12

VISION, MAN, VEHICLE AND HIGHWAY  
by Paul L. Connolly

1967 52 refs

Offers general information on the natural environment, the physiological and visual capabilities in driving. Cautions designers against the over-use of visual and optical guidance considerations for either highway or vehicle; urges eye practitioners to consider the visual characteristics of today's dynamic driving; recommends a total systems approach (man-vehicle-highway) in considering the visual environment and highway safety.

Search terms: Man machine systems, Motor vehicle design, Highway design, Illuminance, Lighting design, Visual perception, Vision\*

AVAILABILITY: In Mich.  
Univ. Prevention of Highway Injury, p122-49 (HS-004 500)

### 3/12 Vision (Cont.)

HS-004 547 Fld. 3/12

DIE BELANGRIKHEID VAN GOEIE  
SIGVERMOE VIR VEILIGE BESTUUR  
(THE IMPORTANCE OF GOOD  
VISION FOR SAFE DRIVING  
Anonymous

Published in Robot n39 p1  
(Aug-Sep 1968)

Among the visual defects  
that concern road safety  
are low visual acuity,  
narrowed field of vision,  
and abnormal susceptibility  
to glare.

Search terms: Highway  
safety, Accident  
causes, Vision reduction,  
Visual perception  
Vision\*, Vision disorders\*,  
Visual acuity\*, Visual  
fields\*, Tunnel vision\*

HS-004 548 Fld. 3/12

NIGHT DRIVING: VISIBILITY  
OF PEDESTRIANS  
by Kare Rumar

Published in Proceedings  
of 1966 International Road  
Safety Congress pl-2

Discusses human visual  
capacity, night driving  
conditions, visibility of  
pedestrians in unlighted  
areas and lighted areas,  
and the need for research  
to determine the nature of  
the driver's visual task  
as the basis for future  
planning.

Search terms: Vision,  
Driver vision, Night  
driving, Night vision,  
Driving conditions,  
Pedestrians, Light  
(visible radiation)

HS-004 653 Fld. 3/12

VISION TEST SCORES AND  
DRIVING RECORD: ADDITIONAL  
FINDINGS. FINAL REPORT  
by Albert Burg  
California Univ., Los Angeles.  
Inst. of Transportation and  
Traffic Engineering

Dec 1968 139p  
Contract Calif. Standard

Agreement-13600  
Report no. 68-27

This report summarizes  
Phase II of a study to  
determine relationships be-  
tween visual ability and  
driving record (accidents  
and convictions for traffic  
citations). This phase  
increased the number of  
drivers to 17,500, re-  
tested the original subjects  
and accumulated 6 year  
driving records. Analysis  
was made by computer.

Search terms: Driver  
vision, Driver tests,  
Regression analysis\*,  
Statistical analysis,  
Accident reports, Driver  
records, Visual fields\*,  
Visual acuity\*, Glare  
recovery\*, Night vision

AVAILABILITY: From corporate  
author

HS-004 668 Fld. 5/10,3/12

THE EFFECT OF HEADLIGHT  
GLARE ON VEHICLE CONTROL  
AND DETECTION OF HIGHWAY  
VISION TARGETS  
by Roger H. Hemion  
Southwest Research Inst.,  
San Antonio, Tex.

1 May 1968 126p  
Contract CPR-11-4126  
Grant SWRI-Proj-11-1908  
Report no. AR-640; PB-179 441  
Final report on Phase I

Vehicle headlight systems  
were studied under simulated  
nighttime driving encounters.  
Benefits (glare reduction,  
target recognition) from  
polarized headlights in  
single vehicle encounters  
(rural highways) was clearly  
demonstrated.

Search terms: Glare reduc-  
tion, Vehicle guidance, Po-  
larized light\*, Lighting  
equipment, Simulation, Night  
vision

AVAILABILITY: From CFSTI as  
PB-179 441

HS-004 771 Fld. 3/12

DURATION OF AFTERIMAGE  
DISABILITY AFTER

VIEWING SIMULATED SUN  
REFLECTIONS  
by Roger L. Saur,  
Slavko M. Dobrash  
General Motors Research  
Labs., Warren, Mich.

10 Dec 1968 15p 9 refs  
Report no. GMR-827  
Prepared for Publication  
in Applied Optics,  
May 1969

Tests were made with 35  
observers exposed for  
realistic intervals while  
looking directly at the  
glare source and the  
duration of the interval  
they needed to identify a  
target was measured.  
They needed an average of  
0.8 to 2.7 seconds longer  
to identify a target  
after being exposed to  
glare. Reduction of  
apparent area of the glare  
source reduced afterimage  
disability more than  
did reduction of intensity.  
The target required a  
visual acuity of 20/40,  
equal to that imposed by  
driver license requirements.

Search terms: Glare,  
Visual perception,  
Driver license standards,  
Visual acuity\*, Driving  
simulation, Time  
factors\*

AVAILABILITY: From  
corporate author

HS-004 772 Fld. 3/12,2/4

SIGHT DISTANCE ON RURAL  
TRUNK ROADS  
by H. C. Hall

Published in Highways and  
Public Works v36 n1/705  
p52-4, 56-7 (Sep 1968)

Sight distance was measured  
on six roads in England and  
Wales and was found to be  
less than that recommended  
for new roads. The over-  
taking sight distance is  
twice the overtaking  
distance to allow for the  
effect of oncoming vehicles.  
Design speed is also  
discussed.

Search terms: Visibility,

### 3/12 Vision (Cont.)

HS-004-772 (Cont.)

Overtaking (driving),  
Visual perception,  
Great Britain\*,  
Rural highways, Road  
design speed,  
Highway design

HS-800 030 Fld. 3/12,3/8

#### GLARE AND DRIVER VISION REPORT

by Merrill J. Allen  
Indiana Univ., Bloomington

1968 66p  
Contract FH-11-6550

Study to measure daylight  
glare produced or modified  
by motor vehicles, to survey  
current knowledge of glare,  
and to devise ways of measur-  
ing glare produced by a  
given vehicle. Tests used  
47 subjects in age range  
18-82. Laboratory tests  
measured glare from sources  
such as windshield dirt,  
sky, hood and chromium in  
simulated hazy bright day-  
light. Five new 1968 Ameri-  
can automobiles from different  
manufacturers were used. Mov-  
ing automobile tests were  
made at 25mph with driver  
and two passengers in the  
front seat recording obser-  
vations of randomly presented  
targets against varying glare  
sources. Results showed that  
effects of each glare source  
were cumulative, and glare  
slowed reaction time. Glare  
and glossy surfaces should  
be removed from the driver's  
field of view.

Search terms: Glare, Motor  
vehicles, Visual perception,  
Driver vision, Driving simu-  
lation, Laboratory experi-  
ments, Gloss, Windshields,  
Daylight\*

AVAILABILITY: CFSTI

HS-004 829 Fld. 3/12,4/7

AN INVESTIGATION INTO SIGHT  
DISTANCES ON RURAL TRUNK  
ROADS WITH SOME THEORETICAL

APPLICATIONS  
by H. C. Hall  
Road Research Lab.,  
Crowthorne, Berks. (England)

Correlogram analysis techniques  
are used to determine the  
nature of variations in sight  
distance on rural trunk roads  
in England and Wales. Examples  
are given of typical distri-  
butions of poor and good sight  
distance (when overtaking and  
passing) for use in a computer  
simulation of traffic flow.

Search terms: Mathematical  
models, Traffic Flow, Rural  
highways, Two lane highways,  
Overtaking (driving),  
Visibility, Computerized  
simulation, Great Britain\*

AVAILABILITY: From  
corporate author

HS-004 875 Fld. 2/9,3/12

URBAN INTERSECTION STUDY.  
VOL. 5, JUDGMENT OF  
VELOCITY IN TWO DIMENSIONS  
by Edwin A. Kidd  
Cornell Aeronautical Lab.,  
Inc., Buffalo, N. Y.

Sep 1968 146p 25 refs  
Contract CPR-11-2856  
Report no. CAL-VJ-2120-V-5;  
PB-180 124  
Final technical report.

A study of the effects of  
velocity in two dimensions  
on the ability to judge  
collision causes with  
binocular viewing and the  
possible perceptual mechanisms  
involved. Both laboratory  
and full-scale studies were  
performed with the following  
variables: velocity of  
observer, velocity of stimulus  
object, stimulus temporal  
pattern (continuous and  
intermittent) dark and  
illuminated field, and distance  
of stimulus from observer.  
Results are discussed and  
tabulated.

Search terms: Intersections,  
Speed, Driver performance,  
Crash research, Laboratory  
tests, Road tests, Driver  
behavior, Visibility,  
Collisions (accidents),  
Visual perception,  
Reaction time, Travel  
time, Traffic data

analysis, illuminance,  
Urban intersections\*

AVAILABILITY: From CFSTI as  
PB-180 124

HS-004 946 Fld. 3/12

VISIBLE DISTANCES AND SAFE  
SPEEDS DURING NIGHT DRIVING  
CAR MEETINGS  
by Gunnar Johansson,  
Kare Rumar  
Uppsala Univ. (Sweden).  
Dept of Psychology

[1966?] 17p 14 refs

Investigation was made to  
determine typical visible  
distances and maximum  
safe speeds during night  
driving car meetings for  
Swedish drivers and to  
demonstrate some night  
driving problems for a broad  
public. It was concluded  
that a driver cannot know the  
exact position and reflectance  
of any obstacle on the road  
and should use a speed suit-  
able for the worst conditions.  
Safety requires either lower  
speeds at night or better  
lighting, as using polarized  
headlights and having reflect-  
ive material on obstacles  
and pedestrians.

Search terms: Night driving,  
Night vision, Sweden\*, Driv-  
ing conditions, Speed, Head-  
lights, Pedestrians,  
Reflecting surfaces, High-  
way safety, Reflectance\*,  
Visibility, Hazards,  
Polarized light\*, Field  
tests

AVAILABILITY: From  
corporate author

HS-004 958 Fld. 5/13,3/12

DESIGNING AND EVALUATING REAR  
VIEW MIRRORS BY COMPUTER  
by Harold W. Krauss,  
Gene Scofield,  
Paul Young  
General Motors Corp.,  
Detroit, Mich.

13-17 Jan 1969 16p  
Report no. SAE-690271  
Presented at International  
Automotive Engineering  
Congress, Detroit, Mich.

The engineer, using a digital

## 3/12 Vision (Cont.)

HS-004-958 (Cont.)

computer to analytically evaluate a rear view mirror, can now obtain a full scale, body view drawing of the mirror, eyes, and vehicle components. In addition to the design function, the computer can be used economically to show compliance with desired viewing requirements

Search terms: Rearview mirrors, Computerized design\*, Digital computers, Human factors engineering, Passenger cars, Trucks, Visibility, Computer programs, Rear vision, Eye (anatomy)

AVAILABILITY: From SAE

HS-005 174 Fld. 3/12

### VISUAL PROBLEMS ASSOCIATED WITH MOTOR VEHICLE DRIVING AT DUSK

by Merrill J. Allen; John H. Carter

Published in *Journal of the American Optometric Association* v35 n1 p25-30 (Jan 1964)

Analyzes factors (visual acuity, eye adaptation, sky brightness, light distribution as the sun sets, loss of accommodative control of a wide pupil) which contribute to visibility loss during twilight driving.

Search terms: Twilight\*; Eye (anatomy)\*; Vision\*; Visibility; Visual acuity\*; Brightness; Night driving; Driving conditions

HS-005 240 Fld. 3/12

### VISUAL CONSIDERATIONS: MAN, THE VEHICLE, AND THE HIGHWAY

by Paul L. Connolly

Published in *Highway Research News* n30 p71-4 (Winter 1968)

Discusses man's visual perception in determining, processing, and acting on traffic events, and in observing visual characteristics of roads. Covers importance of roadway environment and design of highways and vehicles in relation to visual comfort and safety.

Search terms: Vision\*; Visibility; Environmental factors; Highway characteristics; Driving conditions; Driver behavior; Decision making\*; Landscape design; Motor vehicle design; Visual perception; Highway design

HS-005 241 Fld. 3/12; 2/9

### OPTIMUM INTENSITY OF RED ROAD-TRAFFIC SIGNAL LIGHTS FOR NORMAL AND PROTANOPIC OBSERVERS

by Barry L. Cole; Brian Brown

Published in *Journal of the Optical Society of America* v56 n4 p516-22 (Apr 1966) 12 refs

Recognition of a red traffic signal light is most difficult when viewed against a bright sky. A laboratory simulation showed that protanopic drivers (color blindness in the red spectrum) require 4 times the normal intensity for optimum viewing.

Search terms: Signal color; Traffic signals; Visual perception; Luminance; Color blindness\*; Laboratory experiments; Vision disorders\*; Brightness

HS-005 284 Fld. 3/12; 2/5

### THE EFFECT OF GLARE FROM STREET LIGHTING LANTERNS ON THE VISIBILITY OF OBJECTS FOR DRIVERS OF DIFFERENT AGES

by A. W. Christie; A. J. Fisher

Published in *Australian Road Research Board Proceedings of the Third Conference*, Sydney v3 pt1 p570-88 (1966) 31 refs

Report no. Paper-297

Disability glare in lighted streets is important and should not be neglected when calculating revealing power. The equivalent veiling luminance is markedly dependent on the age of the observer. More precise knowledge is needed about the way the equivalent veiling luminance varies with changes in the position of the glare source in relation to the observer's point of regard over the range of conditions important in the street lighting problem. Results of three experiments with 122 subjects are reported.

Search terms: Visibility; Vision\*; Glare; Age factors; Luminance; Street lighting\*;

HS-005 285 Fld. 3/12; 3/4

### THE USE OF THE EYES IN STEERING A CAR ON STRAIGHT AND CURVED ROADS

by Glenn A. Fry

Published in *American Journal of Optometry and Archives of American Academy of Optometry* v45 n6 p374-91 (Jun 1968) 7 refs

Steering behavior of a driver must be studied by comparing the path of the car to the course of the road. Means must be provided for measuring the path of the car and the course of the road. Several methods for acquiring such data are discussed. An attempt has been made to identify the visual cues used in steering. These must be understood to design tests for determining the effect of impaired vision on steering behavior.

Search terms: Steering wheels; Steering (driving); Driver behavior; Road curves; Driver performance studies; Driver-vehicle interface; Vision disorders\*; Vision; Driving tasks

HS-005 286 Fld. 3/12

### DRIVERS' EYE MOVEMENTS: AN APPARATUS AND CALIBRATION

by Thomas H. Rockwell; C. Overby; Ronald R. Mourant

Published in *Highway Research Record* n247 p29-41 (1968) 5 refs

A portable 16 mm. eye-marker camera (head mounted) and a specially designed stabilization unit used to record drivers' eye movements are described. Pilot studies examined drivers' eye movements on two highway test sections for both day and night runs. Drivers' eye movements are closer in toward the vehicle under night driving than under day driving conditions. Calibration accuracy was calculated.

Search terms: Cinematography\*; Driving tasks; Night driving; Vision\*; Eye movement

### 3/12 Vision (Cont.)

HS-005 363 Fld. 3/12

#### THE VISIBILITY OF VEHICLE NUMBER PLATES

by A. M. Marsden; A. L. Packer

Published in *Transactions of the Illuminating Engineering Society (London)* v31 n2 p59-63 (1966)

Two sets of experiments are described on the day-time and night-time visibility of new registration plates in Great Britain. The first series of tests was designed to discover the most common mistakes made in reading number plates. Results indicate that differences in the central portion of two characters are less likely to be recognized than are peripheral differences. The second series, designed to compare the frequency of mistakes in reading a number plate in good daylight with the visual acuity of the observer, showed that virtually no mistakes are made by an observer of acuity 6/7.5 or better in reading a clean plate at 25 yards.

Search terms: Great Britain\*; Visual acuity\*; Visibility; License plates; Visual perception; Laboratory tests; Night vision

HS-005 367 Fld. 5/10; 3/12

#### VISIBLE DISTANCES IN SIMULATED NIGHT DRIVING CONDITIONS WITH FULL AND DIPPED HEADLIGHTS

by Gunnar Johansson; Sten-Sture Bergström; Gunnar Jansson; Chris Ottander; Kare Rumar; Goran Ornberg

Published in *Ergonomics* v6 n2 p171-9 (Apr 1962)

Five experiments are described in which visible distances on the near side of the road were measured when two cars meet in the dark. Results indicate that the dipping of headlights, while cutting down the discomfort due to glare when cars meet, also shortens the distances visible from the cars concerned. The effects of full headlights, dipped symmetrical headlights, and dipped asymmetrical headlights were compared.

Search terms: Visibility; Night driving; Dimmed headlights\*; Glare recovery\*

HS-005 441 Fld. 3/12; 2/5

#### GLARE AS A CRITERION FOR QUALITY IN STREET LIGHTING

by J. B. de Boer; D. A. Schreuder

Published in *Illuminating Engineering Society. Transactions (London)* v32 n2 p117-35 (1967)

A simple method is given for determining the degree of discomfort glare in street lighting installations. Results arrived at by this method are compared with the glare produced in existing installations. Comparison is also made with the rules laid down in the recommendations for public lighting in Great Britain. It is suggested that standards for the limitation of glare, for use in street lighting codes, can be determined on the basis of this method.

Search terms: Great Britain\*; Glare; Luminance; Lighting equipment; Design standards; Street lighting\*; Regression analysis\*

HS-005 444 Fld. 3/12; 5/10

#### YELLOW AND WHITE HEADLAMP GLARE AND AGE

by Veronica Reading

Published in *Illuminating Engineering Society. Transactions (London)* v31 n4 p108-21 (1966)

The re-adaptation times of observers subjected to headlight glare has been measured in a scaled laboratory representation of highway conditions. Eighty-three observers within an age range of 18-66 years participated in the experiments. There is a positive correlation between re-adaptation time and age in both yellow and white illuminants. Furthermore, the speed of re-adaptation is greater, and the percentage of accuracy higher, in white than in yellow filtered tungsten light of equal luminance.

Search terms: Glare; Glare recovery\*; Age factors; Luminance; Visual perception; Headlights; Time factors\*; Laboratory tests; Color perception\*

HS-005 445 Fld. 3/12

#### MOVEMENTS OF THE EYE

by E. Llewellyn Thomas

Published in *Scientific American* v219 n2 p88-95 (Aug 1968)

Results of experiments conducted with a special camera, which records where people look in the course of such activities as driving, indicate that the eye fixes on many things of which the viewer is not aware. How a sequence of eye movements and fixations can be related to the processing of information to the brain is also covered.

Search terms: Visual acuity\*; Visual perception; Eye movement; Retinas\*; Cinematography\*; Peripheral vision; Driver behavior; Photography

HS-005 457 Fld. 5/10; 3/12

#### DISABILITY GLARE EFFECTS DURING A TRANSITION TO POLARIZED VEHICLE HEADLIGHTS

by Roger H. Hemion

Southwest Research Inst., San Antonio, Texas

15 Jan 1969 26p

Contract CPR-11-4126

Report no. AR-672; PB-183 003

Partial report on Phase 4 of a study for the Bureau of Public Roads, Washington, D.C.

Data have been developed to delineate the headlight glare effects which will be experienced by drivers during a transition from present headlight systems to polarized lighting. Improved visibility of roadside obstacles will be achieved. Some instruction of the driving public would aid in adjustment to polarized lighting

Search terms: Polarized light\*; Headlights; Visibility; Glare; Obstructions; Vision; Driver education

AVAILABILITY: CFSTI as PB-183 003

HS-005 587 Fld. 3/12

#### PERIPHERAL VIEWING AND

### 3/12 Vision (Cont.)

HS-005-587 (Cont.)

#### SIMULTANEOUS CONTRAST

by Peter Burgh

Published in *Quarterly Journal of Experimental Psychology* v16 p257-63 (1964)

Experiment to determine the effect on simultaneous brightness contrast of viewing the test patches foveally or peripherally, at a distance of three or six degrees from the fovea. It was found that contrast was greater in the periphery and increased with prolonged viewing of the display. A further experiment showed that blurring the test patches produced an increase in contrast. A striking feature of these experiments was the uncertainty expressed by the subjects, particularly under the conditions of peripheral fixation and blurring.

Search terms: Visual perception; Brightness; Contrast\*; Peripheral vision

HS-005 661 Fld. 5/10; 3/12

#### THE NIGHT-TIME VISIBILITY OF VEHICLE NUMBER PLATES

by R. A. Hargroves

Published in *Transactions of the Illuminating Engineering Society* v32 n3 p172-8 (1967) 8 refs

In this experiment to determine the visibility of number plates after dark, both the level and angle of the illumination were varied. Three types of plates were used and their reflection characteristics determined. Recommendations for best visibility of plates are given.

Search terms: License plates; Visibility; Night driving; Luminance; Reflectance\*

HS-005 688 Fld. 3/1; 3/12

#### A DEMONSTRATION OF THE EFFECTS OF ALCOHOL ON VISION

by Charles R. Stewart

Published in *Journal of the American Optometric Association* v35 n4 p289-90 (Apr 1964)

Describes an experiment which indicated that persons with blood alcohol concentrations less than 0.15% will experience vision problems sufficient to contribute to the auto accident problem. Depth perception, peripheral vision, and reaction time were affected.

Search terms: Blood alcohol levels; Driver intoxication; Drinking drivers; Laboratory tests; Peripheral

#### HS-005 689 Fld. 3/2; 5/4; 3/12 AUTOMOBILE DRIVER EYE POSITION

by James F. Meldrum

Ford Motor Co., Dearborn, Mich.

Published in *SAE Transactions* v74 p599-609 (1966)

Report no. SAE-650464

Describes a driver eye position survey made to provide the automobile industry with standardized data. Coordinate anthropometric measurements of eye position and top of head were recorded photographically using some 2,300 human subjects. Data were referenced to car body inch-lines and to points on manikins. Results revealed a new shape to the driver's eye position zone. The driver's eye position is an important factor in the man-machine system of driver and car.

Search terms: Anthropometry; Human factors engineering; Eye(anatomy) Eye movement; Automobile design; Dummies; Photography; Driver characteristics; Driver-vehicle interface; Eye position

HS-005 691 Fld. 3/4; 3/12

#### HUMAN PERFORMANCE

by John W. Senders

Published in *International Science and Technology* n55 p58-68, 89-90 (Jul 1966) 9 refs

The psychological and physical boundaries of man's ability to process information are described. The driving task is included in the analysis of how man performs. Much emphasis is placed on vision.

Search terms: Driving tasks;

Human behavior; Human factors engineering; Vision\*; Man machine systems; Psychological factors; Physiology; Information theory; Visual perception; Nervous system

HS-005 741 Fld. 2/5; 3/12

#### VISIBILITY, ACCIDENTS AND THE S. A. A. STREET LIGHTING CODE

by A. Fisher

Published in *Australian Road Research* v3 n4 p3-26 (Dec 1967) 34 refs

The Standards Association of Australia requires a light level which should give adequate visibility and ensure the potential reduction in accidents possible in urban traffic. However, it might be warranted to use a higher light level in certain environments such as roads with high usage which may have more accidents, roads with dark environments where visibility of pedestrians is poor, and environments which are dirty or where installations deteriorate.

Search terms: Australia\*; Street lighting\*; Visibility; Accident prevention; Urban areas; Pedestrian safety; Lighting design; Design standards; Lighting equipment; Glare; Comfort; Mathematical analysis\*; Traffic volume; Luminance

HS-005 761 Fld. 3/12; 3/6

#### MOTORIST VISION AND THE DRIVER'S LICENSE

by Oscar W. Richards

Published in *Traffic Quarterly* v20 n1 p3-20 (Jan 1966) 56 refs

Minimum vision examination for a driver's license should include tests for visual acuity and visual field, both of which are closely related to ability to read signs which is necessary for driving. Acuity of 20/40 and visual field of 130 degrees or better should be required. Retesting of accident repeaters should be required. Review of information on age changes in vision suggests that drivers' vision should be retested between the ages of 50 and 55. Depth perception, color vision, and night vision are also discussed.

## HS-005-761 (Cont.)

Search terms: Vision\*; Driver licensing; Driver license renewal; Visual acuity\*; Driver tests; Night vision; Accident causes; Driver license standards; Visual fields\*; Age factor in driving; Depth perception\*; Color perception\*; Signs (displays)

## HS-005 840 Fld. 3/12

### LIGHT SENSITIVITY AS RELATED TO AGE AND SEX

by Albert Burg

Published in *Perceptual and Motor Skills* v24 p1279-88 10 refs

In order to provide normative data on light sensitivity as a function of age and sex, some 17,500 subjects, ages 16 to 92, were tested for both form recognition ability and glare recovery time under scotopic levels of illumination. The results show: (a) a progressive deterioration of performance on both tests with increasing

## HS-005 913 Fld. 5/0; 3/12; 5/4

### EVALUATION OF DRIVER VISION

by Anthony J. Gioia; Clarence E. Morphew

General Motors Corp., Detroit, Mich.

14p 16 refs

Vision, which accounts for more than 90% of the information a driver receives, is influenced by the driver, design of vehicle and highway, and environment. Vehicle design factors and tests affecting driver vision are described. Forward and rear vision design considerations are discussed along with test facilities and techniques used in determining how much the design of the vehicle aids or hinders driver vision. Design examples and future rear vision considerations are given; and test procedures for determining rear view systems' fields of view, obstruction to vision caused by body architecture, and seeing distances are described as well as instrumentation used to evaluate glare producing properties of materials.

Search terms: Vision\*; Visibility;

Highway design; Environmental factors; Motor vehicle design; Motor vehicle lighting; Glare; Eye movement; Rear visibility\*

AVAILABILITY: Paper 10 in General Motors Proving Ground, PROC. OF AUTOMOTIVE SAFETY SEMINAR, 11-12 Jul 1968 (HS-005 901)

## HS-006 049 Fld. 2/0; 3/4; 3/12

### DRIVER PASSING BEHAVIOR ON TWO-LANE HIGHWAYS

by Robert S. Hostetter

HRB-Singer, Inc., State College, Pa.

The singular and combined effects of distance, speed, passing sight distance, and traffic volume on driver acceptance of passing opportunities as they occur on rural two-lane highways were determined. Results indicate that passing sight distance is the predominant variable influencing the passing decision.

Search terms: Two lane highways; Visibility; Driver behavior; Speed; Traffic volume; Passing (driving); Regression analysis\*; Variance analysis\*; Decision making\*; Rural highways; Gap acceptance\*

AVAILABILITY: In American Assoc. for Automotive Medicine, PRE-CRASH FACTORS IN TRAFFIC SAFETY, 17-18 Oct 1968, p39-60 (HS-006 046)

## HS-006 124 Fld. 3/12

### DRIVER EYE HEIGHT

by R. E. Lee

Published in *Australian Road Research* v1 n6 p26-33 (Jun 1963)

Vertical curve design in Australia is based on a driver eye height of 4 feet above the road surface. A study of 1,060 drivers was carried out on rural and urban roads to determine whether this value is still a realistic one. Results indicated that about 50% of the drivers had eye heights lower than 4 feet, and as recent model cars have become lower, a more realistic figure would be 3 feet 6 inches. This 6-inch reduction would bring about only a maximum increase in vertical curve length of 10%.

Search terms: Australia\*; Photography; Sex factor in driving; Automobile models; Visibility; Road curves; Rural highways; Urban highways; Eye level\*

## HS-006 195 Fld. 3/12; 3/8; 1/3; 2/7

### CALIFORNIA'S REDUCED VISIBILITY STUDY HELPS CUT DOWN TRAFFIC ACCIDENTS WHEN FOG HITS AREA

by James E. Wilson

Published in *Traffic Engineering* v35 n11 p12-4, 44-51, 53 (Aug 1965)

Various means of giving advance warning to drivers of the need for greater driving caution during periods of reduced visibility have been studied. Studies were undertaken after a series of chain reaction crashes. Ways of affecting the driving behavior of motorists who disregard reduced visibility were tested. Signs, speed limits, tailgating, headway, traffic markings, increased patrol car surveillance were studied.

Search terms: Fog; Driving conditions; Visibility; California\*; Reduced visibility; Tailgating; Headway\*; Traffic markings; Law enforcement\*; Police traffic services; Highway signs; Speed limits; Speed reduction; Driver behavior; Accident causes

## HS-006 253 Fld. 5/0; 3/12

### VISUAL CONSIDERATIONS OF MAN, THE VEHICLE, AND THE HIGHWAY. PART 1

by Ingeborg Schmidt

Indiana Univ., Bloomington. Div. of Optometry

1967 109 refs

Report no. SAE-660004

Includes discussion by Glenn A. Fry, Ohio State Univ.

A short physiological optics review for designers and users of automobiles is presented. In view of their importance in driving, special attention was given to the problems of glare, the time factor in vision, and the visual problems in motion and in color vision. Eye movement, visual field, sensory mechanism comprising adaptation, contrast sensitivity, visual acuity, and perception of motion, direction, and distances are discussed.

### 3/12 Vision (Cont.)

HS-006-253 (Cont.)

Search terms: Automobile design; Vision; Visual acuity; Eye (anatomy); Vision disorders; Glare; Time factors; Motion perception; Visual fields; Color perception; Visual perception; Driver-vehicle interface; Driving tasks

AVAILABILITY: In Society of Automotive Engineers, HIGHWAY VEHICLE SAFETY, 1968, p318-51, 413 (HS-006 239)

HS-006 254 Fld. 5/0; 3/12

#### VISUAL CONSIDERATIONS OF MAN, THE VEHICLE, AND THE HIGHWAY. PART 2

by Paul L. Connolly

1967 83 refs

Report no. SAE-660164

Includes discussion by Glenn A. Fry, Ohio State Univ.

Suggestions for reducing accidents and fatalities on the road are offered from the standpoint that vision is the one common denominator in all four elements involved in highway safety—the vehicle operator, the vehicle itself, the highway, and the highway environment. Human vision as related to vehicle and highway performance is discussed.

Search terms: Highway characteristics; Driving conditions; Accident factors; Driver-vehicle interface; Vision; Human factors engineering; Automobile design; Man machine systems; Visual fields; Motion perception; Visual acuity; Color perception; Visual perception

AVAILABILITY: In Society of Automotive Engineers, HIGHWAY VEHICLE SAFETY, 1968, p352-413 (HS-006 239)

HS-006 306 Fld. 3/12; 3/11; 3/1

#### THE ABILITY TO SEE A PEDESTRIAN AT NIGHT: THE EFFECTS OF CLOTHING, REFLECTORIZATION AND DRIVER INTOXICATION

by Richard D. Hazlett; Merrill J. Allen

Published in *Archives of American Academy of Optometry* v445 n4 p246-58 (Apr 1968) 18 refs

In the United States, pedestrian deaths account for nearly 20% of all traffic fatalities. At low levels of illumination sensitivity to contrast decreases as an individual's blood alcohol level increases. Dummies covered with white fabric were safely visible at 50 mph; only reflectorized dummies were safely visible above that speed. At blood alcohol levels greater than 0.04% a significant decrease in mean visibility distance occurred for each of the simulated pedestrian conditions.

Search terms: Pedestrian safety; Drinking drivers; Visibility; Blood alcohol levels; Night driving; Dummies; Fatalities; Driver intoxication; Color perception; Pedestrian accidents; Visual perception; Laboratory tests; Road tests

HS-006 307 Fld. 3/12

#### HOW DARKNESS TRICKS THE DRIVER

by Elf J. Pedler

Published in *Traffic Safety* v62 n2 p22-4 (Feb 1963)

An explanation is given of how the eye functions under bright and dark conditions as they are related to potential accident factors: rain, visibility, headlights, dirty windshields, fatigue, illness, glare, car ventilation, smoking. Ten tips on night driving are included.

Search terms: Night driving; Night vision; Visual acuity; Visual perception; Glare; Eye (anatomy); Accident factors; Driving conditions; Visibility; Rain; Driver fatigue; Driver physical fitness; Windshields; Smoking factor in driving; Headlights

HS-006 358 Fld. 3/12; 3/4

#### HOW TO USE YOUR EYES WHEN YOU DRIVE

by R. Cartwright Hicks

Published in *Supervisory Management* v14 n4 p21-4 (Apr 1969)

Over 70% of accidents occur under safe driving conditions. One reason may be that drivers fail to see. Five

basic seeing habits for safe driving are discussed: aim high in steering; get the big picture, looking in several directions; keep your eyes moving; leave yourself an out so you will not be trapped; make sure pedestrians and other drivers can see you.

Search terms: Visual perception; Driver skills; Eye movement; Pedestrian safety; Driver behavior; Accident causes; Visibility; Defensive driving

HS-006 167 Fld. 5/13; 3/12

#### MOTOR VEHICLE REAR VISION. FINAL REPORT

by Charles R. Kelley; Daniel J. Prosin

Dunlap and Associates, Inc., Santa Monica, Calif.

Aug 1969 209p 82 refs

Contract FH-11-6951; PB-186 228

The primary purpose of this study was to provide a basis for safety standards in the rear vision area. It provides a state-of-the-art report on this subject, covering passenger and commercial vehicles, and includes questionnaires and interviews with experts. The key problem is field of view. Data on eye fixations for various vehicle-mirror combinations are given. It is concluded that wide-angle (90-100 degree) over-the-top rear view systems are the most effective way of providing adequate passenger car rear vision. Proposes that safety standards require the elimination of blind spots for both passenger and commercial vehicles, and that rear view displays should not occlude important areas of the forward scene.

Search terms: Rearview mirrors; Rear vision; Automobile design; Safety standards; State of the art studies; Commercial vehicles; Questionnaires; Eye movement; Measuring instruments; Field of view; Interviews; Visibility

AVAILABILITY: CFSTI as PB-186 228

HS-006 403 Fld. 3/12; 3/3

#### MOTORCYCLE HELMET VISIBILITY AND RETRO-REFLECTORIZATION

by Richard D. Hazlett; George R. Courtney; L. A. F. Stockley; Merrill J. Allen

### 3/12 Vision (Cont.)

HS-006-403 (Cont.)

Published in *American Journal of Optometry and Archives of American Academy of Optometry* v46 n9 p666-75 (Sep 1969) 8 refs

Twenty subjects made 1,100 judgments in the laboratory on the identifiability of a circle, triangle, square, and rectangle of solid and open configurations at low luminance levels. The rectangle was the most identifiable with the triangle, square, and circle following. Six subjects made some 360 observations from an auto. Recognition distance of the open triangle was the greatest. The purpose of the study was to determine the minimum acceptable area and best format for reflective material on a motorcycle helmet to achieve reasonable visibility and identification at night. Recommendations for the size and shape of reflectorized material on helmets are made.

Search terms: Laboratory tests; Road tests; Helmets; Helmet design; Luminance; Visibility; Reflecting surfaces; Motorcycle safety; Night driving

HS-006 419 Fld. 5/10; 3/12

### MISUSE OF RED LIGHT ON AUTOMOBILES

by Merrill J. Allen

Published in *American Journal of Optometry and Archives of American Academy of Optometry* v41 v12 p695-9 (Dec 1964) 6 refs

The red taillights on an automobile do not mean stop alone, but mean go, stop or turn, depending upon intensity or whether some are flashing. Green taillights, coupled with red stop lights and flashing turn signals, would produce an instantly intelligible and a safer system. Advantages in using green are: (1) green is the color most likely to focus on the retina; (2) green is not subject to serious brightness loss in any form of color vision defects; (3) green will not adversely affect persons with myopic of hypermetropic vision.

Search terms: Vision disorders; Taillight color; Automobile design; Visual perception; Visibility; Taillights; Signal color; Color perception; Turn signals

HS-800 171 Fld. 3/12

### EVALUATION OF DIRECT VISIBILITY FOR AUTOMOTIVE PASSENGER VEHICLES BY A FIGURE OF MERIT

by Richard L. Barnoski; John R. Maurer; B. Andrew Kugler

Measurement Analysis Corp., Marina del Rey, Calif.

Aug 1969  $\pm$ 150p 13 refs

Contract FH-11-6893; PB-187 287

The development and use of a simple analytical model to assess the direct visibility afforded the driver of a passenger car are described. The model, called a figure of merit model, incorporates as basic inputs the field of view available to the driver and the visual field required for safe driving. Figures of merit were calculated for thirteen 1969 vehicles, based upon a driver population defined by means of a 99th percentile eyellipse. Poor placement of rearview mirrors and poor spatial relationships of the vehicle interior relative to eye positions of the driver population contributed to lowering figure of merit ratings. The study results can be used as relative measures of good visibility for the vehicles considered and can be extended to provide visibility standards for cars.

Search terms: Visibility; Mathematical models; Automobile models; Interior design; Rearview mirrors; Eye level; Field of view; Design standards; Driver characteristics; Test equipment; Measuring instruments; Motor vehicle handling; Traffic control devices; Driver-vehicle interface; Figure of merit; Photogrammetry; Rear visibility; Windshield washers

AVAILABILITY: CFSTI as PB-187 287

HS-800 172 Fld. 3/12

### EVALUATION OF DIRECT VISIBILITY FOR AUTOMOTIVE PASSENGER VEHICLES BY A FIGURE OF MERIT. APPENDICES

by Richard L. Barnoski; John R. Maurer; B. Andrew Kugler

Measurement Analysis Corp., Marina del Rey, Calif.

Aug 1969  $\pm$ 150p 72 refs

Contract FH-11-6893; PB-187 288

A figure of merit model to assess the direct visibility afforded the driver of a passenger car has been derived. This volume contains data on the photogrammetric method used in testing, computer program for projections, basic data displays, data for a typical figure of merit computation, and an annotated bibliography.

Search terms: Figure of merit; Computer programs; Mathematical models; Visibility; Eye level; Field of view; Photogrammetry; Automobile models; Bibliographies; Windshield washers

AVAILABILITY: CFSTI as PB-187 288

HS-006 469 Fld. 3/12; 2/9

### THE CONSPICUITY OF TRAFFIC SIGNS AND FACTORS AFFECTING IT

by Kari Eklund

Central Organisation for Traffic Safety in Finland, Helsinki (Finland)

1968 39p 60 refs

Report no. TALJA-6

Bound with *ITS EFFECT ON THE PERCEPTION OF TRAFFIC SIGNS AND DRIVING HABITS.*

The objective of the study was to clarify three problems: the differences between various traffic signs in regard to conspicuity and the causes of differences; what factors affect the perception of traffic signs; and in what way the perception of traffic signs depends upon time. The intention was to find the correlation between visual stimulus contents and sign perception and to find what factors affect variations in vigilance. Good sign conspicuity was found to be related to brightness, simplicity, difference from other signs, frequency of use on the road, and importance of information given.

Search terms: Traffic signs; Visibility; Visual perception; Laboratory tests; Brightness; Finland; Color; Signs (displays); Psychological factors; Time factors

AVAILABILITY: Corporate author (Bound with HS-006 470)

### 3/12 Vision (Cont.)

HS-006 470 Fld. 3/12; 2/8; 2/9; 3/4

#### EFFECT OF POLICE SUPERVISION ON THE PERCEPTION OF TRAFFIC SIGNS AND DRIVING HABITS

by Matti Syvanen

Central Organisation for Traffic Safety in Finland, Helsinki (Finland)

1968 27p 11 refs  
Report no. TALJA-6

Bound with THE CONSPICUITY OF TRAFFIC SIGNS AND FACTORS AFFECTING IT, p35-57.

The effects of police supervision on driver perception of a traffic sign were studied. If a police car was parked near the traffic sign, drivers observed the car but only 29.2% observed the sign. If the car was parked further from the sign, 52% of drivers noticed the sign. Other aspects of the influence of police supervision on driver behavior are also discussed. Presence of a patrol car causes a decrease in poor driving habits.

Search terms: Police traffic services; Finland; Driver behavior; Visual perception; Traffic signs; Traffic surveillance; Police cars; Careless driving

AVAILABILITY: Corporate author  
(Bound with HS-006 469)

HS-006 520 Fld. 3/12; 3/9; 3/6

#### RELATIONSHIP OF OCULAR PATHOLOGY AND DRIVING IMPAIRMENT

by Arthur H. Keeney

Published in *Transactions of the Pennsylvania Academy of Ophthalmology and Otolaryngology* v21 p22-7 (Spr 1968)

Presented at annual meeting of Pennsylvania Academy of Ophthalmology and Otolaryngology, May 1967.

Of 1,153 Pennsylvania drivers required to take driving tests or medical exams, 33% proved to have need for corrective measures, some involving their vision. Ground rules for a medical review board are: whether the illness is short-term; individualized examinations; giving the handicapped the benefit of the doubt. Twelve basic problem areas

involving visual defects and problems are listed.

Search terms: Medical advisory boards; Pennsylvania; Vision tests; Vision disorders; Handicapped drivers; Driver physical fitness; Medical examination; Driver tests

HS-006 558 Fld. 2/4; 1/3; 3/12

#### ROAD SURFACE CHARACTERISTICS AND ACCIDENTS

by Barbara E. Sabey

Published in *Medicine, Science, and the Law* v3 p500-11 (Oct 1962) 6 refs

Examples are given in three fields of study to illustrate how road surface characteristics play an important part in contributing to accidents: skidding resistance of roads, visibility requirements at night, and riding quality of road surfaces. Police accident reports and study at the scenes of accidents have provided a basis on which to work. Accidents can be reduced by correcting roads which have been polished and slippery and by improving street lighting. Improving the riding quality of roads gives rise to increases in the speed of traffic and may increase the accident rate. The study was made in Great Britain.

Search terms: Pavement skidding characteristics; Accident prevention; Accident causes; Visibility; Night driving; Accident reports; Accident studies; Road surfaces; Skidding accidents; Street lighting; High speed; Accident rates; Great Britain; Wet road conditions; Skid resistance

HS-006 565 Fld. 2/9; 3/12; 1/3

#### IMPROVED SIGNAL VISIBILITY REDUCES ACCIDENTS

by Arthur L. Kassan; Timothy F. Crowder

Published in *Traffic Engineering* v19 n7 p42-4 (Jun 1969)

Accident history comparison for 68 Los Angeles intersections indicates that improvement in signal visibility reduces the most predominant types of intersection accidents and thus has a high payoff in relation to the relatively low cost of improvement. Signal modernization cost less than \$5,000 per intersection.

Search terms: Benef analysis; Los Angeles; rates; Visibility; Traffic signals; Accident prevention; Costs; Intersections

HS-006 567 Fld. 2/9; 3/12

#### COMPUTED DISTANCES OF LEGIBILITY OF STANDARD TRAFFIC CONTROL SIGNS

by H. W. Hofstetter

Published in *Journal of the American Optometric Association* v38 n5 p381-5 (May 1967)

Standardization of highway signs is discussed. A chart prepared by the Bureau of Public Roads, "Standard Traffic Control Signs," illustrates 114 standard signs with specifications of dimension and advice on construction. Another source for sign standardization is the "Manual on Uniform Traffic Control Devices for Streets and Highways," also prepared by the Bureau of Public Roads. The recommended signs have been tested for legibility at 60 mph with 20/20 vision, and results are discussed.

Search terms: Signs (displays); Standardization; Highway signs; Visibility; Speed; Manual on Uniform Traffic Control Devices for Streets and Highways

HS-006 582 Fld. 3/12; 5/10

#### VISUAL OPERATIONAL FEEDBACK AND DESIGN OF VEHICLE FRONT-END ILLUMINATION FOR NIGHT DRIVING PERFORMANCE

by Henry S. R. Kao; Mitsuo Nagamachi

Published in *Perceptual and Motor Skills* v28 p243-6 (Feb 1969)

Visual operational feedback in vehicular control is the spatial difference between the roadway path and the positional changes of the vehicle in motion. A previous study showed that elimination of such feedback by obscuring the visibility of vehicle front and rear ends degraded driving accuracy. The hypothesis tested in the present study is that increasing visual operational feedback by illuminating certain points of the hood would facilitate safe and accurate driving performance at night. Three red-light indicators were

### 3/12 Vision (Cont.)

HS-006-582 (Cont.)

designed as cursors in operator-vehicle-road tracking. Results confirmed the assumptions. It is concluded that illuminating points of the hood would improve driver performance.

Search terms: Night driving; Visibility; Driver performance studies; Human factors engineering; Automobile design; Motor vehicle control; Driver-vehicle interface; Motor vehicle lighting

HS-006 620 Fld. 3/12

#### VISION AT LEVELS OF NIGHT ROAD ILLUMINATION. II. LITERATURE 1965

by Oscar W. Richards

Published in *Highway Research Record* n164 p21-8 (1967) 103 refs

Presented at the 45th annual meeting of the Highway Research Board.

This is a literature review of the work published during 1965 on all aspects of vision in relation to driving at night. Journals and reports, chiefly in English, are cited. Attention is called to papers of special significance.

Search terms: Vision; Night driving; Highway lighting; Reviews; Bibliographies; Glare; Visibility; Street lighting; Night vision; Vision tests; Visual fields; Visual acuity; Color perception; Vision disorders; Driver physical fitness; Eyeglasses

HS-006 621 Fld. 3/12

#### THE RELATIONSHIP BETWEEN NIGHT DRIVING ABILITY AND THE AMOUNT OF LIGHT NEEDED FOR A SPECIFIC PERFORMANCE ON A LOW CONTRAST TARGET

by Merrill J. Allen; William M. Lyle

Published in *Journal of the American Optometric Association* v34 n16 p1301-3 (Nov 1963)

Presented at the 42nd annual meeting of the Highway Research Board.

A test is described which can measure at least two factors that can increase

is representative of vision requirements of most driver licensing agencies. Even a moderate visual impairment will likely necessitate an increase in the illumination required to see a low contrast object on the highway at night to amounts above those currently available. It is concluded that less than optimum visual apparatus can perform satisfactorily with sufficient light. Drivers are tested for visual acuity under high illumination and contrast conditions, which will not indicate their real ability.

Search terms: Vision tests; Night driving; Vision disorders; Contrast; Visual acuity; Illuminating; Highway lighting; Driver tests; Driver license standards

HS-006 622 Fld. 3/12; 2/4

#### A SAFE SIGHT DISTANCE REQUIREMENT FOR UN-LANED RURAL ROADS

by W. H. Valentine

Published in *Rural and Urban Roads* v6 n2 p34-5, 52 (Feb 1968)

The hazard of two vehicles approaching each other over blind summit curves in the same lane has not received proper attention. Many low-volume rural roads are subject to this hazard because of their vertical alignment and lack of lane control marking. Formulas for computing sight distance requirements at various speeds are given.

Search terms: Visibility; Rural highways; Traffic markings; Speed; Highway characteristics; Road curves; Hazards; Mathematical analysis; Traffic volume

HS-006 674 Fld. 2/5; 3/12

#### VISIBILITY AS CRITERION OF THE ESTIMATION OF STREET LIGHTING INSTALLATIONS

by M. A. Ostrovsky

Published in *Public Lighting* v33 n143 p191-7 (Dec 1968) 16 refs

The code for street lighting used in the USSR is discussed. For comparative estimation of the different types of liminaries and the ways of their arrangement, visibility is recom-

fluence of non-uniformity of luminance distribution on visual performance under street lighting conditions should be defined.

Search terms: Mathematical models; USSR; Street lighting; Visibility; Luminance; Reflectance; Lighting design; Lighting equipment

HS-006 682 Fld. 2/9; 3/12

#### FACTORS IN HIGHWAY SIGN VISIBILITY

by T. W. Forbes

Published in *Traffic Engineering* v39 n12 p20-7 (Sep 1969) 12 refs

This research summarizes a systematic study of sign visibility. The research consisted of laboratory simulation experiments and a full-scale outdoor check to relate the results to real life observations. The results showed essentially that brightness contrast factors were of greatest importance and that contrast of letter-to-sign and sign-to-background should be balanced for best visibility and effectiveness. Hue contrast was also of importance, but secondary to brightness or lightness contrast. Relative size factors were important where several signs were seen at once.

Search terms: Visibility; Highway signs; Brightness; Color; Mathematical models; Laboratory tests; Simulation models; Field tests; Contrast; Color perception; Signs (displays); Visual perception

HS-006 690 Fld. 3/5; 3/12

#### TEACHING PERCEPTUAL SKILLS

by Leon Brody

Published in *Caldea Calendar* v15 n4 p17-8 (Jun 1968)

Perception involves more than vision; it involves awareness and comprehension of data transmitted from the physical and social environment. In connection with driver education, it is recommended that seeing must be developed as an aggressive act with a premium on speed of discernment; that a wide variety of experiences must be provided so that the student will understand many traffic situations; and that the student must be

### 3/12 Vision (Cont.)

HS-006-690 (Cont.)

Search terms: Visual perception;  
Driver education; Psychological  
factors; Perception; Driver skills;  
Traffic characteristics;

HS-006 696 Fld. 3/12

#### RECOGNITION OF COLORED ROAD TRAFFIC LIGHT SIGNALS BY NORMAL AND COLOR- VISION-DEFECTIVE OBSERVERS

by John Nathan; Geoffrey H. Henry;  
Barry L. Cole

Published in *Journal of the Optical  
Society of America* v54 n8 p1041-5  
(Aug 1964) 18 refs

Normal and color-defective observers  
were asked to identify 13 signal light  
colors as either red, green, or yellow  
in laboratory tests with only chroma-  
ticity and brightness differences as  
cues for identification. Choice reac-  
tion times and errors were measured.  
A high correlation between these  
yields was found and each was ana-  
lyzed separately.

Search terms: Signal color; Color  
perception; Vision disorders; Labo-  
ratory tests; Reaction time; Bright-  
ness; Vision tests; Statistical  
analysis

HS-006 752 Fld. 3/12; 5/4

#### AUTOMOBILES, VISION AND DRIVING. AN EVALUATION OF THE VISION AND HUMAN FACTORS OF 1963 BUICK RIVIERA

by Paul L. Connolly

Published in *Optometric Weekly* v54  
n31 p1451-8 (1 Aug 1963)

The human packaging of this auto-  
mobile model is favorably evaluated.  
The features discussed include the  
steering wheel, door handles, seats,  
windows, rearview mirror, instrument  
panel, and lights. These features are  
evaluated from the point of view of  
visibility.

Search terms: Automobile models;  
Visibility; Automobile design;  
Vision; Steering wheels; Seat  
design; Windows; Rearview mirrors;  
Instrument panels; Lighting design;  
Motor vehicle lighting; Passenger  
packaging; Doors

HS-006 753 Fld. 3/12; 5/4

#### AUTOMOBILES, VISION AND DRIVING. AN EVALUATION OF THE VISION AND HUMAN FACTORS OF 1963 PLYMOUTH FURY

by Paul L. Connolly

Published in *Optometric Weekly* v54  
n26 p1241-5 (27 Jun 1963)

This automobile model is favorably  
evaluated from the point of view of  
visibility. The features discussed  
include the lights, instrument panel,  
rearview mirrors, electric window-lift  
buttons. Some glare is found from  
the windshield, and the concave  
instrument cover lenses are criticized.

Search terms: Automobile models;  
Visibility; Automobile design;  
Vision; Rearview mirrors; Windows;  
Glare; Instrument panels; Lighting  
design; Motor vehicle lighting;  
Windshields

HS-006 754 Fld. 3/12

#### AUTOMOBILES, VISION AND DRIVING

by Paul L. Connolly

Published in *Optometric Weekly* v54  
n16 p727-30 (18 Apr 1963)

A new monthly column on vision and  
driving is introduced and the subject  
matter which will be covered is out-  
lined. The driver's visual tasks, the  
relation of vision to design of high-  
ways and cars will be discussed in  
various aspects.

Search terms: Vision; Driving  
tasks; Highway design; Automobile  
design; Visibility